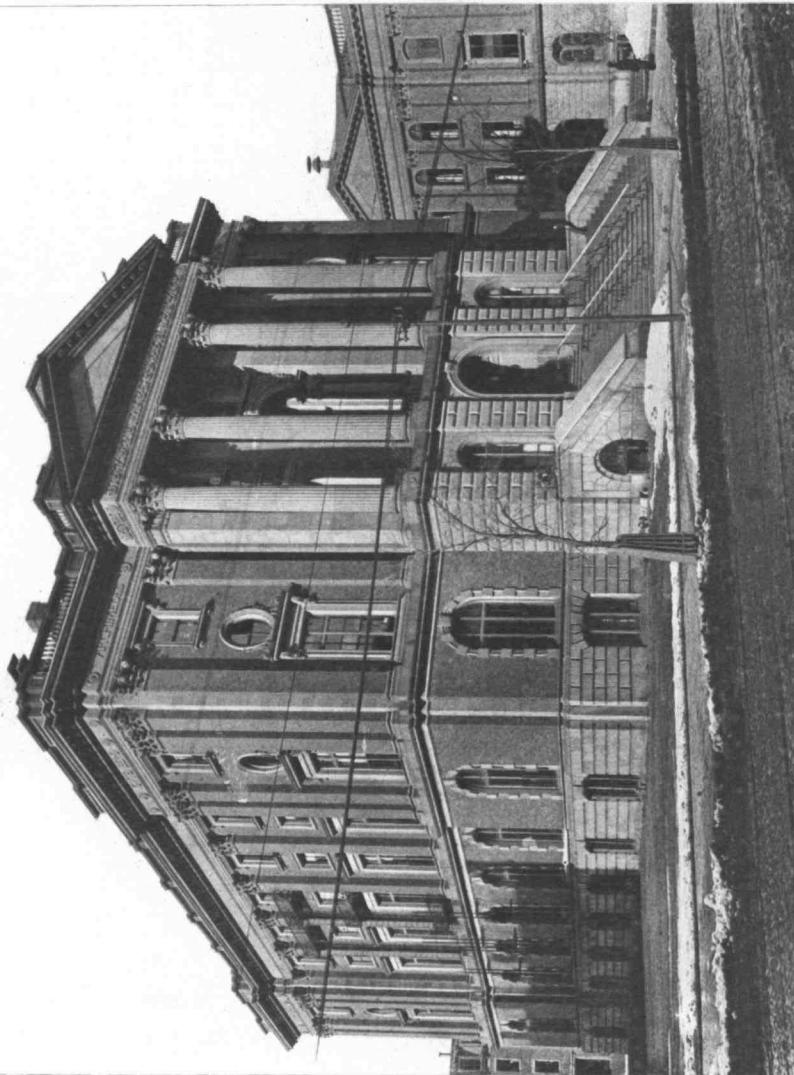


John Andrew & Son, Boston

THE ROGERS BUILDING
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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The Technology Review

VOL. VI.

JULY, 1904

No. 3.

THE FIRST TECH REUNION

The first general reunion of the alumni of the Massachusetts Institute of Technology held in Boston on June 6, 7, and 8, was a splendid success and resulted in various benefits, not only to the men themselves, but to the school in particular and to the cause of American education in general. It broadened and deepened the loyalty of the men to their Alma Mater. It showed that, contrary to popular belief, there exists among the graduates of a technological school a very distinct college spirit, and that cold scientific specializing cannot chill the social and fraternal instincts of such a body of men. It demonstrated that the alumni have the interests of the school very deeply at heart, and that they have strong convictions regarding the future of the Institute.

The REVIEW presents in detail an account of the various events in the four days' program : —

REUNION PROGRAM

SUNDAY, JUNE 5

4 P.M. Baccalaureate Sermon to the Graduating Class by Bishop Lawrence at Trinity Church.

MONDAY, JUNE 6

8 A.M.—9 P.M. Registration (Pierce Building, Trinity Place). (*Registration head-quarters were open from Saturday morning, June 4, to Thursday evening, June 9.*)

2 P.M. 1904 Class Day Exercises, Huntington Hall.

3—4 P.M. Reception by Dr. Samuel J. Mixter at 180 Marlborough Street.

4-6 P.M. Reception by Mrs. William B. Rogers at the Tuileries, 270 Commonwealth Avenue.

6-9 P.M. Dinners of Classes, Fraternities, etc.

9-11 P.M. Reception by the Corporation and Faculty at the Museum of Fine Arts.

TUESDAY, JUNE 7

9-12 M. Local Excursions.

2-6 P.M. Class and Fraternity Spreads.

2.30-4 P.M. 1904 Graduation Exercises, Huntington Hall.

4 P.M. Reception by the President to the Graduating Class, Rogers Building.

4-6 P.M. Visits to Institute Departments.

6-8 P.M. Dinners of Classes, Fraternities, etc.

8-10.30 P.M. Tech Night at the "Pop" Concert, Symphony Hall.

WEDNESDAY, JUNE 8

10 A.M.-5 P.M. Harbor Excursion. Special steamer. Lunch at the Atlantic House.

7 P.M. Alumni Dinner, Hotel Somerset.

8-10 P.M. Reception to Ladies by Mrs. Samuel J. Mixter at 180 Marlborough Street.

COMMITTEE OF ARRANGEMENTS

Chairman, S. J. Mixter, '75. *Secretary*, A. G. Robbins, '86.

Vice-Chairman, J. P. Munroe, '82. *Treasurer*, E. G. Thomas, '87.

Representatives of the Alumni Association, the Faculty, the Association of Class Secretaries, and the Technology Club.

SUB-COMMITTEES

Class Dinners. F. H. Fay, '93; H. E. Clifford, '86; H. W. Smith, '97.

Decorations. H. W. Gardner, '94.

Excursions. I. W. Litchfield, '85; A. D. Little, '85; F. L. Locke, '86; E. G. Thomas, '87; B. R. T. Collins, '88; A. T. Bradlee, '88; Hollis French, '89; Charles Hayden, '90; J. L. Batchelder, Jr., '90; S. P. Bremer, '93; H. N. Dawes, '93; C. M. Spofford, '93; E. S. Mansfield, '96; J. A. Rockwell, '96; C. W. Bradlee, '97; H. L.

Coburn, '98; C. M. Swan, '99; F. W. Freeman, '01; A. Gardner, '02; C. G. Mixter, '02; W. J. Mixter, '02; B. Blum, '04; W. W. Cronin, '04.

Headquarters and Registration. C. F. Park, '92; W. A. Johnston, '92; S. C. Prescott, '94; H. W. Hayward, '96.

Hospitality. G. V. Wendell, '92; A. E. Burton, F. H. Rand, R. R. Lawrence, '95.

Hotels and Accommodations. W. B. Snow, '82; S. K. Humphrey, '98.

Program. J. P. Munroe, '82; F. F. Bullard, '87 (music); L. W. Pickert, '93 (arrangements for concert).

Publicity and Correspondence. H. W. Tyler, '84; H. S. Chase, '83; W. B. Thurber, '89; C.-E. A. Winslow, '98.

Reception by Corporation and Faculty. W. T. Sedgwick, C. S. Minot, '72; S. J. Mixter, '75; C. H. Woodbury, '86; Giles Taintor, '87; C. A. Stone, '88; Hollis French, '89; C. F. Park, '92; Guy Lowell, '94.

Transportation. E. G. Thomas, '87; C. R. Place, '02; Azel Ames, Jr., '95; A. D. Fuller, '95; V. R. Lansingh, '98.

EXECUTIVE COMMITTEE

The officers and the chairmen of sub-committees.

AUXILIARY COMMITTEE OF THE CORPORATION

C. A. Stone, '88. Francis Blake. Samuel Cabot, '70.

E. S. Draper, '78. C. C. Jackson.

COMMITTEE OF THE ASSOCIATION OF WOMEN OF THE INSTITUTE

Ellen H. Richards, '73. Ethel F. Fifield, '00.

Margaret Dodd, '92.

ATTENDANCE DURING REUNION WEEK

A conservative estimate of the number of alumni who actually attended the reunion is about 1,600. The registration books showed more, but many of these names were of wives and invited guests of graduates. The actual attendance at many of the exercises, such as the Pop concert and the Nantasket excursion, was nearly 2,000 at each function.

It was interesting to observe from the register at headquarters the wide geographical distribution of the Technology alumni. In nearly every quarter of the inhabited globe where civilization is being advanced Technology men are busy in the work of the applied sciences. In Hawaii are six graduates, in London, eleven, and in Paris nearly as many. Six Japanese graduates reside in Tokio, where one is the proprietor of the leading Japanese newspaper, another is managing director of an important Eastern mining property, and a third is president and director of two railways. With these far-distant men came graduates to the reunion, not in person, but in spirit, from Korea, Persia, Peru, Siam, South Africa, Syria, and Turkey,—even from the ends of the earth.

On the register, Selskar Gunn wrote his permanent address as London, Eng. Although the majority of these who attended the reunion came from New England, twenty-five came from New York, thirty from the Northwest, fourteen from Illinois, seven from Washington, D.C., and an equal number from Pennsylvania. From Germany were present R. Stresau and H. Schapira, of the class of 1904. Ernest, '91, journeyed across the continent from Berkeley, Cal., joining the North-western delegation at Chicago. In this special car from the West came men from Cleveland, Chicago, Duluth, Minneapolis, Salt Lake City, Des Moines, Omaha and Joplin.

A few jottings from the register show how widely heard was the summons of Alma Mater: T. Jones, Newark, N.J.; C. L. Homer, Galveston, Tex.; W. A. Kemper, Butte, Mont.; Mrs. I. M. Lovitt, Yarmouth, N.S.; J. W. Roland, Aylesford, N.S.; W. J. Sweetser, Sackville, N.B.; N. D. Emerson, Wilmington, N.C.; Mr. and Mrs. F. F. Johnson, Wallace, Idaho; Mr. and Mrs. W. M. Newkirk, C. C. Carhart, Salt Lake City, Utah; A. L. Klieves, Wheeling, W. Va.; H. French, Marshalltown, Ia.; J. A. Furer, Sheboygan, Wis.; J. B. Rapier, Moline, Ala.; E. J. Wilson, Bellefontaine, Ohio; and B. A. Yoder, Omaha, Neb.

Registration began on Saturday, and the headquarters in the Pierce Building were kept open from 8 A.M. to 9 P.M. throughout the reunion. Every convenience and facility had been provided;

and the work of registering, of giving out badges, of delivering tickets, and of validating the one and one-third rate railway tickets, was admirably carried out. The Margaret Cheney Rooms, on the same floor as the registration office, were kept open to receive the ladies coming to the reunion; and every courtesy and attention was shown to them by the committee of Institute women in attendance. To hundreds of willing and generous helpers, and not least to the American Telephone and Telegraph Company for free telephone service, and to Mr. Gilbreth for the use of his automobile and chauffeur, the Reunion Committee are under lasting obligation.

BACCALAUREATE SERMON

The first event, after the coming of the New York delegation and the concert of the Musical Clubs on Saturday evening, was the baccalaureate sermon delivered by the Rt. Rev. William Lawrence, Bishop of Massachusetts, to the class of 1904 at Trinity Church, Sunday, June 5, at 4 P.M. The great building was crowded, the graduating class and members of the Faculty being seated in the centre of the church.

The bishop said in part: —

What you want of me this afternoon is not, I believe, a disquisition on some of the greater truths of theology and life, but a few direct and practical suggestions as to your relations to God, man, and your future work, as you pass out into the responsibilities of life.

There are three conditions that I am going to name this afternoon, which you young men will meet in the coming generation. It is well that, as you look forward to life, you should consider thoughtfully your attitude toward them.

The first point is that the coming half-century will bring to this country an increase of wealth even greater than that which has come to us in the last half-century. At times we are almost appalled at the thought of the fortunes that men in the next half-century will amass. Then, again, we ask ourselves, Is this something to be dreaded or welcomed? Are we to have so little faith in men that we must assume that great wealth will be to them a curse rather than a blessing? Or does not there now come to us as a people the call so to adjust our political methods by the highest statesman-

ship, our financial system by the greatest wisdom, and our characters by the closest training, as to make this wealth not a source of danger and destruction, but of beneficent power? The question before us, then, is not first as to the amount of wealth that is to come to this people, but as to the power of the people's character to carry the wealth, and to use it as an instrument for the higher service of mankind.

It will be given to very few, my friends, perhaps to none of you, to enter into such a life as I have suggested; for great fortunes will always be rare. To all of you, however, will come the experience and the test of character of which I next speak. It is that which arises from keen competition. I say "keen competition"; for we have got, my brothers, to prepare to meet even higher pressure in the coming years than in the past, and, what is more, we have got to meet the strain of character which comes with it. As you look forth into the world now, you see the machinery of life moving at a tremendous rate. It is hard for you to find even an humble place in it. As the great social and mechanical organization passes by you, you see men drop from their situations here and there through death and failure. You leap to a vacant place; and, having got it, the question is now, can you keep it? To leave figures, every young man in these days finds it difficult to discover his place; and, when discovered, he, if he be of only average ability, finds it hard to hold it. There are young men all about him ready to step into his position, if through any failure he drops out.

"The life is more than meat, and the body is more than raiment." It is of little matter whether one lives in a somewhat better tenement or a more elegant locality, if his temper is soured and his life embittered. Equanimity of temper, cheer, sympathy, and love and a spirit of gratitude are what go to make up life. The health of a nation is dependent upon the answer to the question as to whether these hundreds of thousands of people, in an age of high pressure and competition, are going to have a larger outlook and a true sense of proportion, which bring serenity of temper and joy in living. An education which fits a man simply to make a living is not an education which makes for the best character. A career which has for its ambition simply the getting on in life is not a career which will make a man for this nation.

See to it that, as you begin your active life, you so adjust your habits, your methods of work and thought, that, while you keep yourselves keen and alert to the interests of your profession and do your utmost to hold your place and gain on it, you also hold yourself in right relations to society, and maintain a sense of true proportion between your work and the amenities of

life, your culture and your public duties. Beware of that hard and loveless temper which may arise from the sense that one is the competitor of society and the enemy of his fellows. Keep your sympathies broad and your temper serene.

The third strain which modern life brings is closely associated with that to which I have just referred,—in fact, almost identical. It is, however, upon the great body of the working class, especially in our factories and machine shops, that the strain of which I want finally to speak comes.

In that interesting debate in Faneuil Hall last winter on the questions between President Eliot and Mr. Foster, Dr. Eliot emphasized "the joy of producing much," and the satisfaction of the laborer in his labor. Mr. Foster answered : "It is entirely conceivable to the average wage-earner that the president of a great university may find joy in the strenuous and potential work of shaping and directing the intellectual development of thousands of fortunate youths, but we respectfully submit that it is scarcely fair to suggest that the drudgery of the workshop gives back an equal inspiration and reward. The actual and prevailing mental attitude of the trade unionist towards his work is this, that he lives by it, not for it. Self-interest, to say nothing of a sense of duty, impels him to perform his task efficiently ; but he vehemently protests against being compelled to spend all his time and all his energy in the mere getting of bread and butter."

We may assume that this feeling represents the feeling of tens of thousands, perhaps of hundreds of thousands, of laborers, men, women, and children, in our factories, shops, and other great industrial centres. Many of you will be brought into close relation with these people ; and upon you, as representatives of intelligent citizenship and educated science, rests to a large degree the answer to the question as to whether the life of the laborer who has such forms of mechanical work to do is to be joyless and hopeless or whether it is to be tempered with a sense of opportunity, if not kindled with the joy of production. The problem is clear. Through the development of machinery a certain number of men, women, and children have got to do work that is extremely mechanical. The question before us is not how that work is to be avoided, but how it is to be met and done. Avoided a fraction of it will be with the development of better machinery ; and we shall find, as we have found in the past, that the genius of men will enable a mechanism to do what men, women, and children are doing to-day. Nevertheless, with this said, we cannot hope for the day when mechanical labor of such sort as we are familiar with will wholly pass away.

Now I believe that the one motive that is needed in the great body of

our working people, which may be instilled in childhood and nurtured in youth and manhood, is the sense that each and all of them, wherever they are placed, are doing their share, if they live in the right spirit, toward building up the great social fabric of which they are a part. This is an age of team play, and the test of character of the team is as to whether each man will do his part, not only for himself, but for the whole body.

To some is given one position, to others another. Those who have the best positions have the responsibility and privilege of doing all in their power to make life as happy as possible for those who are in the harder positions. But, if one can only inspire in the life of the humblest mechanic in our humblest factory the thought that he, in working patiently, efficiently, steadily, and with a high character, is doing his part toward the building up of the great social fabric, he will have given him a motive which will make his labor easier, better, and indeed full of joy.

To carry this thought one step further, if one can kindle in each of the people—man, woman, and child—a sense of his true relation to God, a realization of the coming of the kingdom, and an appreciation of the fact that he has his part in making the kingdom come, then his motive in work will be so much the higher and brighter. Am I speaking too much in mystical language? What I want to say is that the coming of the kingdom of God is not first what is mystical or heavenly, but what is real and close to us all. God's kingdom is society saturated with the characteristics of God,—justice, love, purity, self-sacrifice, joy. God's kingdom cannot come so long as a half or a quarter or even a hundredth of our people are working in the spirit of grim and sullen despair, or even so long as they work simply to keep body and soul together. The kingdom of God can come only when all of us have such a realization of our duty in life, of the privilege of labor, and the opportunity that we have to bring into the little humble circle in which we live the finer elements of character, a temper serene, helpful, and full of hope.

CLASS DAY

Monday morning was given to registration, to meeting friends, and to receiving the delegates from the North-western Association of the M. I. T., who came from Chicago early in the morning.

For many of the visitors it was a great pleasure to visit, by courtesy of the class of 1904,—the largest graduated in the history of the Institute,—a feature of Technology which was not

familiar to many of the older classes. This was the Class Day exercises in Huntington Hall, Monday afternoon, where the Senior Class assembled before their relatives and friends for the last time as an undergraduate body.

On such occasions the classes pause for a brief retrospect of their memorable years together, and acknowledge through their chosen spokesmen their indebtedness to their various benefactors. Brilliant social event as is Class Day, with the hall crowded with proud parents, admiring relatives, and sweet friends arrayed as only the fair can array themselves for Class Day, only the Seniors, as they contemplate their officers seated amid palms and ferns on the platform, confess their deep sentiments of the occasion. But deeper still are the feelings of the older alumni in listening to their youngest brothers, as with an expression of their aims, and with a bit of humor and a tinge of pathos, they ceremoniously face the fateful years.

The president of the class, Walter Elbridge Hadley, in a graceful address, introduced the first marshal, Currier Lang, who pointed out the significance of the occasion. He said:—

There are two things I wish to say to-day in the way of squaring our account before we leave Tech, which we could not have said at all times during our course. The first concerns the nature of our regard for the Institute.

The four years that we have spent here represent a struggle to keep going that has been light for some, but very real for others; and sometimes this struggle has given us a touch of feeling that is not just to the Institute. It is the feeling that what we have got from this school we have taken by main force, and that the degrees which come to us to-morrow come only because we have left nothing that could be used for an excuse for keeping them from us. Looking at this matter from our present standpoint, we find that our Alma Mater is a little like the real mothers who bring up the sturdiest sons; and we now appreciate that she has known what was best for us at times when we thought she was hard. Our stern mother Institute has held us to the path with a firm hand. We must admit that she has never, from her excess of mother love, recoiled from causing us pain when we were unwise and made false steps; but she has taught us to be honest and industrious, to play when our work is done, and that our duty must be done even

when it is unpleasant. We now appreciate what Technology has given us better than we ever have before.

The other matter is in regard to what Class Day stands for. This is not the day of the man who has been most successful in the work of his course, and in whom the Faculty must officially see the most marked signs of future success. This man may be identical with the man whom every one likes, who is the squarest and most generous friend, and with whom we are most sad to part. In that case it is his day. We intend to consider this class from an entirely different standpoint than that of mental acquirement. This is a day when it is recognized that the class has human nature and feeling, whereas the official machinery of the Institute does not take great account of such personal matters. We expect to talk over the things that have affected our emotions in one way or another, and we shall probably get a little fun out of the process.

The speaker whom I am to introduce first is our Class Day statistician. You all know the old saying that there are three kinds of lies,—plain lies, white lies, and statistics. I ask you not to take too seriously whatever may be shown by the coming analysis. I take pleasure in introducing Mr. W. H. Eager, statistician.

Stepping to the front of the platform, the statistician took the audience unawares by suddenly drawing from under the reading desk a volume of such formidable bulk as to create much applause.

Ladies — and other victims [said he, beginning the humorous features of the undergraduate play], the word “statistics” in itself is perfectly inoffensive, and even insignificant, but statistics when used by a public speaker for a subject of discussion can produce much suffering. During our four years in this Institute we have learned several valuable maxims :—

“Never do to-day what you can just as well do to-morrow. Never do to-morrow what you can get somebody else to do for you.”

From the teaching of such maxims the statistician had required the members of the class to prepare their own records, an analysis of which he proceeded to read. Three hundred and seventy-four men entered as the class of 1904 in September, 1900, representing twenty-eight different States and a number of foreign countries, such as England, France, Germany, Mexico, and Canada.

Of those who attempted to enter, said the speaker, sixty-one flunked

their entrance examinations, and have not been heard of since. They are to be congratulated as well as we.

To-morrow two hundred and thirty-one members of the class will graduate, making the largest class by a margin of thirty-three ever graduated from the Massachusetts Institute of Technology.

He then described the average member of the class, a composite made up from the combined statistics of every man — save one. The result produced a Freshman eighteen years and six months of age, a Senior of twenty-two years seven months' maturity. This composite man of the class of 1904 is 5 feet 9.1 inches tall, having brown hair, blue eyes, and weighing 155 pounds, requiring a No. 7 hat, and shoes numbered $7\frac{1}{2}$.

The statistician then described with elaborate technical detail the operations he performed with the class records in attempting to find the class "grind," the class "sport" and the class "fusser."

He discovered that the honor of being the handsomest man in the class devolved upon Walter Hadley, the president, information which somewhat discomfited the popular president.

For the title of being the homeliest man in the class, nine candidates tied for the distinction, too numerous a classification to be enumerated.

Miss Florence Wetherbee was elected by the class as its favorite "co-ed"; while Harry E. Clifford was signalized as the most popular professor.

After this levity and a selection by the orchestra, the class orator, Merton Leslie Emerson, was introduced.

Mr. Emerson said :—

To-day we may for the last time call ourselves undergraduates. We are on the eve of our commencement, or, as we prefer to call it, our graduation, our promotion into life's work. To-morrow marks for us the end of the work of four years, during which we have given our best thought and energy to this Institute. We are now, as it were, on the threshold; and it may be interesting to pause for a moment to look back over our last four years of study, and to draw, if possible, some conclusions.

Our aim here has been a technical education,—technical because it is an education toward definite ends. At the close of our four years' training we

are now ready to commence our apprenticeships in our chosen professions. Are we satisfied so far, or do we wish we had been trained differently?

Scientific education was established as a protest against college education founded upon the classics. It represented a radical departure in lines of thought, having, as it did, for its basis scientific truths, unhampered by old traditions. Its introduction shows that there was felt to be a weakness in college education of that day,—a conviction that it had not kept pace with the progress of human thought. The need was felt for an institution in which could be obtained training better adapted to modern conditions. The result was the founding of this Institute.

It was only natural that, in the beginning of this modern scientific method of training, the pendulum should swing to the opposite extreme, and that good as well as bad points of classical education should be omitted. The result is that scientific education is even now criticised for being concerned wholly with the industrial, and not at all with the academic world. The graduate of a technical school is charged with intellectual narrowness, in that he throws himself so earnestly into his own chosen profession that his liking for philosophy, literature, and art, is largely lost.

Such criticism is undoubtedly deserved, though less at the present time than in the past. No one can appreciate the narrowness of a scientific course more clearly than one who has spent four years so busily engrossed in work that the so-called culture studies and pleasures have, of necessity, been largely neglected.

This tendency toward narrowness is the great lack of our education. It is fully realized, and all leading scientific schools are endeavoring to make a technical education a broad education. We know from personal experience what a difficult problem this is, and how hard it is to do justice to the courses in literature, history, and economics given in connection with our professional work. We fully appreciate the lack of roundness in our education; and yet, looking backward over our four years of study, it is difficult to see what changes could be made.

Such being the case, we must analyze ourselves as we are. First of all, a man in a technical school has a great advantage in that he must of necessity work with some fixed purpose toward some definite end. He cannot dabble long without being lost. System is therefore necessary, and must be carried out in training. The strength which comes from this training is the most valuable possession which we take from here.

We are to be engineers. Our chief—President Pritchett—has defined an engineer as “one who solves practical questions by scientific methods.” He might have said “one who solves practical questions by practical methods”;

for the graduate of a technical school should be a practical man in the true sense of the word,—a trained man, who combines theory and practice.

As engineers, we take upon ourselves new duties and new responsibilities. Society has a right to expect more from trained than untrained men. Our obligations are therefore greater, not less, than those of other citizens. We shall naturally develop and grow in the line of our professional work. Our danger lies in the fact that we shall be likely to confine ourselves too closely to that narrow field.

This is the weakness against which we must guard. We must realize that, to be equal to all emergencies, we must have breadth. We must be men, not machines. We have not had a liberal education, but we have been so trained that now it remains solely with ourselves to use this training to develop into broad, liberal men.

Perhaps many of us wish at this time that we might have combined our technical training with a college course, that it had been possible to take professional studies as graduate work. Such an education is surely an ideal one. This, however, has been impossible to most of us; and it is, of course, a question whether such a training would, for the average man, be as practical as it is ideal.

This, then, is the position in which we stand. We are trained men. We lack neither earnestness nor enthusiasm. Our danger lies in not fully realizing that we have of necessity been confined to a narrow field during our past four years.

We now have to make ourselves. It is our duty to get into the broad, general questions of the day. We have no right to remain negative. We have no right to stand aside and condemn. Society has a right to expect us, in addition to our professional work, to act, to throw our influence, our whole selves for truth, for cleanliness, and for good government.

If we do our duty here, we cannot remain narrow. We must acquire breadth. By so doing we shall grow true men, true to our profession, and true to this institution from which we graduate to-morrow, the largest class in its history.

The formal exercises concluded with the presentation oration by Louis Gustave Bouscaren, Jr., who, simulating the inspired fervor of the impassioned orator, presented to various popular men of the class appropriate little gifts burlesquing their characteristics displayed during their class life. The exception to this fun-making was the presentation to President Pritchett of a magnificent silver loving-cup.

Before distributing the gifts, Mr. Bouscaren said:—

With the silver tones of an orator still echoing from these walls, can you blame me if I shiver at the thought that this last effort of the class is put down on the programme as an oration?

Ladies and gentlemen, you have heard one orator: you will hear no other to-day. We have, as you perhaps already suspect, finished our four years at the Institute. We have fulfilled the requirements, we have gone through, as others have done before us. As Freshmen, we inhaled all the foul odors that the chemical laboratory could furnish, and then asked for more. As Sophomores, we sat in this very hall, and saw Professor Currier, the thoroughbred from Kentucky, gallop through the history of Europe. As Juniors, we became familiar with the dear little sixth letter of the alphabet. As Seniors, we prepared and published a new set of notes, entitled "How to Get Ahead of the Faculty." So we are ready to receive our reward. We shall do so to-morrow: we sincerely hope you will all be there.

You know that among the heavenly bodies there are always one or two bright stars before whose overpowering light other stars twinkle pale and feeble. The class of '04 is not a heavenly body, but it is like the heavenly bodies in this respect. There are a few who are head and shoulders above the rest of us: high above the common herd they stand in excellence. I appeal to your sense of justice. Is it right that these few be allowed to leave without some special reward for what they have done? I hear the consciences of 1,200 just people answer, "No, give every man his due, and let the names of the few valiant ones be written in letters of gold upon the walls of the Hall of Fame."

Then calling various members of the class to the platform, one by one, Mr. Bouscaren presented them with the gifts proffered with appropriate remarks, which greatly embarrassed the recipients, but much amused the audience.

The most beautiful part of the entire exercises was when Mr. Bouscaren called the name of Henry Smith Pritchett. As the President approached the platform, every one in the audience respectfully arose. The orator said:—

Dr. Pritchett, You have already done us the honor of calling yourself a member of our class. You know every man in the class; but you do not know the affection, the confidence, and the esteem which every member of the class has for you.

Disclosing a magnificent silver, gold-lined loving cup which he handed to the President, Mr. Bouscaren continued :—

Let it remind you of the men who will always remember you with the greatest regard. But I charge you, sir, to handle it with care, as it contains the hearts of us all.

The President was completely taken unawares, and was all but overcome with emotion. His voice trembled, and tears came to his eyes.

When he regained sufficient composure to speak, he said faintly :—

I thought this was only some more of the fun. It is impossible to say anything. I thank you.

Amid a great ovation President Pritchett returned to his seat.

The audience then went downstairs to the lawn between the Rogers and the Walker Buildings, where a spread was served.

The Class Day Committee was as follows: George Edwin Atkins, Bernard Blum, Louis Gustave Bouscaren, Jr., John Ford Card, William Walter Cronin, George Alden Curtis, William Hosmer Eager, Guy Warner Eastman, David Elwell, Merton Leslie Emerson, Walter Elbridge Hadley, Charles Rogerson Haynes, Everett Osgood Hiller, Amasa Maynard Holcombe, Ralph Osborne Ingram, Currier Lang, John Delaney McQuaid, George Hardy Powell, and Charles Leonard Steinrock.

RECEPTION BY MRS. ROGERS

Many hundred of the alumni and their friends availed themselves of the opportunity to pay their respects to Mrs. William Barton Rogers at an informal reception given by her at The Tuileries, Monday afternoon, from four to six o'clock. All persons attending the reunion, together with the class of 1904 and their friends, were invited. With Mrs. Rogers in the receiving line were Mrs. Francis A. Walker and Mrs. Henry S. Pritchett.

Members of the alumni were also tendered a reception by Dr. S. J. Mixter, president of the Alumni Association, at his home,

180 Marlborough Street, on Monday afternoon, from three to four o'clock.

RECEPTION AT THE MUSEUM OF FINE ARTS

The program of Monday concluded brilliantly with the reception by the Corporation and Faculty at the Museum of Fine Arts. Rarely is the great museum of art treasures enlivened with such gay throngs as filled its vast rooms from 9 until 11 P.M. By courtesy of the Trustees of the museum the building was, for the occasion, placed at the disposal of the Institute.

The structure is not only admirably adapted for a large reception, but is conveniently near to the centre of the reunion activities. That the alumni were honored by the use of the building is shown by the fact that the last large public reception held within its walls was a year ago, during the convention of the National Educational Association.

During the evening more than 1,000 guests passed the receiving line, as about 500 invitations in addition to those to the alumni were issued to prominent people around Boston who are interested in higher education.

As the guests arrived, they passed up the main stairway to the upper corridor, where they formed in line to be presented. In this upper corridor, embowered behind palms and greenery, members of the Boston Symphony Orchestra throughout the evening rendered a fine program.

The receiving party was stationed in the first picture gallery, a large room to the right of the upper hall. In the party were President and Mrs. Henry S. Pritchett, Mrs. William B. Rogers, Mrs. Francis A. Walker, Colonel T. L. Livermore, Professor and Mrs. Gaetano Lanza, and Professor R. H. Richards.

The scene in this picture gallery, brilliantly lighted, its walls hung with famous canvases, and with a continuous procession of alumni and superbly gowned ladies passing in review, evoked expressions of delight from every one.

From the receiving gallery the guests visited the various beauti-

ful rooms of the museum, and proceeded through canopies across the street to the Hotel Westminster, where a collation was served.

GRADUATION EXERCISES OF THE CLASS OF 1904

The largest Senior Class in the history of the Institute of Technology received diplomas from President Pritchett at the graduation exercises held in Huntington Hall, Tuesday, June 7, from 2.30 to 4 P.M. Degrees were conferred upon 243 young men and women, 231 receiving the degree of bachelor of science, and 12 receiving the degree of master of science.

As representative of the civil engineering course, A. R. Holbrook read a thesis treating of a test to determine the shearing strength of mortar and concrete; W. L. Doten, mechanical engineering, tests on concrete columns reinforced with steel rods; W. P. Schumacher, mining engineering, the concentration of a copper sulphide ore from Virginia. H. W. Rowe, architecture, a design for a columbarium for a large cemetery; L. M. Bourne, chemistry, a study of an enzyme contained in the seed of the castor bean; B. H. Clingerman, A.B., electrical engineering, the construction and operation of an experimental high tension transmission line; W. C. Lounsbury, biology, an investigation of the efficiency of commercial milk-pasteurizers; D. F. Comstock, physics, the effect of magnetism on dielectric capacity; M. H. Schwartz, general studies, a study of the development of Massachusetts trust companies; C. F. Underhill, chemical engineering, a study of the destructive distillation of some American peats; H. P. Drake, sanitary engineering, a study of the loss of capacity in sewage filters; G. E. Atkins, naval architecture, tests on the auxiliary engines of the steamship "Nantucket."

President Pritchett, before conferring the degrees, spoke in part as follows:—

Four years ago next September I entered with you the Institute of Technology. You who stand before me to-day are the survivors of a much larger army of comrades which started out buoyantly together at that time. In company with you I have had the experience of first knowing the Institute

and its work ; and, although I shall stay for a post-graduate course, I hope I may never cease to have a part in your class deliberations.

At the last there remains to me only to give you the greeting of the Institute, the message of good will of its Corporation and of its Faculty, and to hope that before each of you lies a career of honor and of usefulness. No voice which your Alma Mater can hear will so thrill and inspire her as that which comes from a son of hers who is doing a man's work in the world.

The important new factor in the business world into which you go is organization. Whether one studies England or Germany or America or Japan, the national problem to-day is that of effective organization. Every one of you has to find his place in some organization, and a part of your success will depend on your ability to fit into that organization.

The problem with you will be how to preserve independence of thought and of character, and still lend yourself heartily and loyally to the organization you may undertake to serve. Sometimes these two are impossible, and the man of character must choose the first instead of the second ; but he should make clear to himself in such a decision the moral and personal considerations which move him, and be sure that they are considerations of principle, not of personal wish.

Great problems lie before the world in your time. The government of the United States has just embarked upon the most ambitious engineering project it has ever undertaken. In these plans of the future I trust you may have your full part ; and wherever you go, whether your place be a great or a small one, the Institute of Technology will look with pride and interest upon your work if it be well and faithfully done.

Following is a list of the graduates :—

BACHELORS OF SCIENCE

COURSE I., CIVIL AND TOPOGRAPHICAL ENGINEERING

Edwin Francis Albright, Albert Wilson Bee, Jr., Frederic Anthony Biggi, Llewellyn Bixby, Bernard Blum, William Walter Cronin, John Earle Cunningham, Frank Howard Davis, Merton Leslie Emerson, Charles James Griffin, Richard King Hale, Richard Gardner Hartshorne, Hiram Augustus Hill, Arthur Raymond Holbrook, Lewis Thomas Howard, Natt Madison Johnson, William Arthur Kemper, Harry Stillman Kendall, William Howard Koppelman, Currier Lang, Harry Levine, Fred Knights Merri-

man, William Donaldson Murray, Clarence Adkins Neal, Rolf Raymond Newman, Arthur Peabody Porter, John Wilson Roland, Frank Joseph Severy, Edgar Field Smith, Edward Everett Stetson, David Sutton, Oscar Gowen Thurlow, Albert Pierce Weymouth, Jules Edward White.

COURSE II., MECHANICAL ENGINEERING

Perrie Morgan Arnold, Charles Frederic Barrett, Herman Otto Blatt, Stephen Lawrence Bradley, Francis James Carty, Maurice Walter Carty, Harry Herman Cerf, Willard Dalrymple Chandler, Ernest Lowell Clifford, Allan Seymour Courtney, Walter Louis Cronin, Joseph Warren Crowell, Myron Wilkinson Dole, William Leslie Dotten, Clifton Clark Easterbrooks, William Hendrik Edgecombe, William Archibald Evans, Cyrus Yale Ferris, Julius Lawrence Hecht, Everett Osgood Hiller, Amasa Maynard Holcombe, Addison Francis Holmes, Edwin Rowland Humphrey, Ralph Osborne Ingram, Joseph Augustine Keenan, Carl King, George Eastman Libbey, James Lawrence Lyon, John Delaney McQuaid, Edward Harris Metcalf, August William Munster, Arthur Wellington O'Connor, Lee Phillips, Fred Merton Pierce, William Frederick Rech, Edward Far-num Rockwood, Harry Tebbetts Rollins, Ernest Louis Rupf, Calvin Richards Sheafe, Herman Ellis Thompson, Edwin Pool Tripp, Winfred DeWitt Vosbury, Reginald Andrew Wentworth, Emery J. Wilson, Edwin Thomas Wood.

COURSE III., MINING ENGINEERING AND METALLURGY

Ralph Emerson Adams, Albert Heber Bailey Arnold, George Albert Barnaby, George Martin Bates, William Brenton Boggs, Moses Brown, Jr., John Ford Card, Clem Clare Carhart, Roy Ernest Dimock, Walter Dalton Estes, Robert Faulkner, George Ralph Gaenslen, Lewis Goode Gillett, Walter Elbridge Hadley, Charles Ashley Hardy, George Bates Harrington, Carle Reed Hayward, Reginald Haseltine, Elmer Allen Holbrook, Frederick Waters Horton, Mark Graham Magnuson, Gyula Bennett Manson, Hubert Merryweather, Harry Fordham Noyes, Rufus Cook Reed, Guy Crosby Riddell, Waldron Page Schumacher, John Whitman Shaw, William Waldo Trowbridge, Fremont Nelson Turgeon, Ralph Brown Williams.

COURSE IV., ARCHITECTURE

James McFarlan Baker, George Wright Briggs, Franklin Murphy Chase,

Lewis Cutler Clarke, Jr., Eliza Codd, Linda Susan Fraser, Friedrich Ernest Giesecke, Moise Herbert Goldstein, George Garfield Hall, Andrew Hopewell Hepburn, Cyrus Pierce Howes, Alfred Henry Jacobs, George Merrill Magee, Frederic Nickerson, Alexander Webster Richards, Frances Ropes, Henry Woodbury Rowe, Leon Hills Smith, Theodore William Steidemann, Omar Stephen Swenson, Robert Edward Lee Taylor, Harrison Allan Whitney, Oliver Martin Wiard, Lewis Gamaliel Wilson.

COURSE V., CHEMISTRY

Edna Greenwood Bailey, Kenneth Michael Baum, Lyman Murphy Bourne, Arthur Caldwell Downes, William Wheeler Duncan, Frederick William Farrell, William Duncan Lynch, Marquis Edgar Mason, Robert Stanley Phillips, Walter Philip Regestien, Stanislaus Skowronski, Arthur Ditson Smith, George Riddell Spalding, Florence Louise Wetherbee, Edward Wallace White.

COURSE IV., ELECTRICAL ENGINEERING

John Winfrid Ager, Roland Hunnewell Ballou, William Perry Bentley, Louis Henri Gustave Bouscaren, Jr., Byron Horace Clingerman, Henry Harrison Dudley, William Hosmer Eager, Charles Wickersham Elmer, David Elwell, Neil Davis Emerson, Albert Clark Ferry, Grant Ford, Don Loomis Galusha, Selby Haar, Humphrey Matthew Haley, Joseph Allen Haraden, Henry Keene Hooker, George Karl Kaiser, Andrew Otterson Miller, Joseph Crawford Nyce, Robert Palmer, Karl Ernst Peiler, Roland Ball Pendergast, Robert Morris Phinney, John Bernard Rapier, Lester Asa Russell, John Royal Sanborn, Henry Warren Stevens, Richard Stresau, Philip Starr Sweetser, William Newman Todd, Sidney George Ward, William Gordon Howard Whitaker, Jr., Walter Whitmore.

COURSE VII., BIOLOGY

Katharine Dexter, William C. Lounsbury, George Edward Willcomb.

COURSE VIII., BIOLOGY

John Samuel Bridges, Jr., Charles Reed Cary, Daniel Frost Comstock, Will Ransom Crowell, Guy Warner Eastman, Walter Josiah Gill, Jr., Herbert Thomas Kalmus, Roy Davis Mailey, Harry Hampton Needham, Eliot Wright Niles, Henry Kneeland Richardson, Hersu Schapira, Robert Browning Sosman.

COURSE IX., GENERAL STUDIES

Joseph Kittredge Elliot, Dennie Kelley Keller, Edward Francis Parker, Jr., Alfred Peabody, Melvin Humbert Schwartz.

COURSE X., CHEMICAL ENGINEERING

Arthur Warren Bartlett, Alfred Worcester Burnham, Joseph Bernard Finnegan, Charles Rogerson Haynes, Charles Hoy, Charles Francis Underhill, Arthur Cutts Willard.

COURSE XI., SANITARY ENGINEERING

Henry Philkins Drake, Halsey French.

COURSE XII., GEOLOGY

Irving Elwood Adams.

COURSE XIII., NAVAL ARCHITECTURE

George Edwin Atkins, Ralph Hubert Baker, Calvin Perry Bascom, James Swasey Currier, Charles Joseph Emerson, Austin Young Hoy, Alpheus Crosby Lyon, Ambrose Moody Merrill, Robert Brooks Morse, George Hardy Powell, Rowland Greenville Rice, Arthur Osborne Roberts, Edward Candee Scofield, Norman Leslie Snow, Charles Leonard Steinrok, Howard Leslie Stevens, Grant Sterne Taylor.

TECH NIGHT AT THE POP CONCERT

The greatest night of the reunion, if not the most ebullient gathering in the history of the Institute, was the uproarious merging of college spirit and melody denunciative of any other merger, which will pass into tradition as the "Tech Alumni Night" at the "Pop" concert in Symphony Hall, Tuesday, June 7.

Every class ever graduated from Tech was represented by delegates assembled around the tables designated by class numerals on crêpe-paper banners of cardinal and gray. Around each of these thirty-seven class banners rallied from a half-dozen to two hundred classmates, all of them bidding for the honor of making the most

cheerful hullabaloo. The composite result was a great human cauldron seething for two hours and a half like a test-tube over a Bunsen burner. Such a jolly, boisterous time did each celebrant enjoy that the whole scene demonstrated college spirit which excelled any college enthusiasm on record, and from "stern men of science not particularly noted for any prominent fraternalism."

Descriptive writers seeking hereafter superlative comparisons of gleeful tumult may say effectively that an extreme panic on a stock exchange floor, with various factions madly yelling about the Erie post or trying to break a corner on wheat, reminded one of the Tech alumni rallying around their class banners at the greatest of the Pop concerts; or political writers describing the modern Inferno of pandemonium in a national convention can exaggerate by saying that the State delegations went roistering over the convention hall almost as tumultuously as the class of 1904 entered Symphony Hall by the rear door and marched, singing, down the centre aisle to places near the stage.

But 1904 was no noisier than '68; for Professor R. H. Richards, Eli Forbes, S. S. Whitney, and Joseph Stone, rejuvenated under the electrical Tech spirit, made as much noise as any of the youngsters.

By eight o'clock the balconies bloomed like a garden with fair ladies and their escorts who were privileged to observe the grads warming up their memories of undergraduate frolics. Nor did the spectators wait long ere the first gladiators of noise marched triumphantly into the arena, bearing the numerals of '98. '92 arrived shortly after, and at once engaged '98 in a vocal combat. For a full hour the classes arrived every few minutes, augmenting the chorus of cheers until the statutes around the halls trembled on their pedestals.

With '87, which marched in a body from their dinner at the Boston Athletic Association, came Gelett Burgess and Frederic F. Bullard. These two prominent disturbers of the peace of Harvard were the captains of the opposing elements of the program, one representing the uncontrolled exuberant spirit, the other the formal musical program rendered by the finest orchestra in America.

Probably few who attended Tech night, however, were aware

of the excellence of the musical organization which furnished the scheduled program of the occasion. For the graduates came to frolic and to express to one another, as in a caucus, their convictions that Tech will go on to greater glory as the greatest technological school in America entirely without the assistance of the Gordon McKay millions and without any affiliation with Harvard University.

For this reason they went roistering up and down the gay hall, singing to the tune of "John Brown's Body" a universal sentiment penned by the author of "The Purple Cow":—

You can't make crimson out of cardinal and gray,
You can't make crimson out of cardinal and gray,
You can't make crimson out of cardinal and gray,
As Tech goes marching on.

We don't give a d—— for Ha-a-vud,
We don't give a d—— for Ha-a-vud,
We don't give a d—— for Ha-a-vud,
As Tech goes marching on.

Bullard, '87, had been invited by Mr. Timothée Adamowski, regular leader of the orchestra, to conduct the entire program; but, by request of the Executive Committee, he divided the honors with the regular Symphony man, for Bullard had other things to do. The assembled celebrants heartily consented to this arrangement. For when Mr. Adamowski took up the bâton, after Bullard had opened the program, he was presented with a very generous bottle of wine. As for Mr. Bullard, when he had not only led the playing of his own popular songs, but had caused the bass fiddles and the saxophones and all the other instruments to simulate a college yell, he was seized summarily by the enraptured grads, and carried up and down the hall on their shoulders.

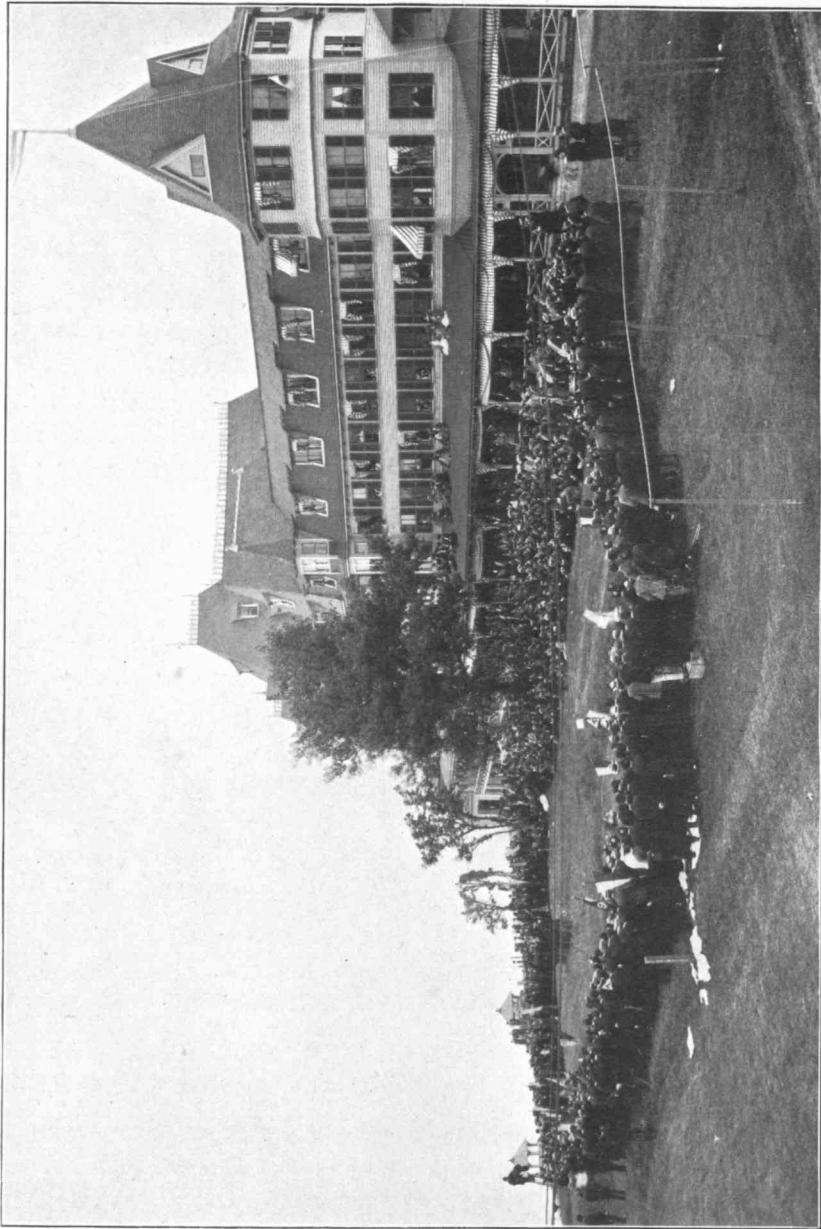
"For it's always fair weather
When good fellows get together,
With a stein on the table and a good song ringing clear."

In addition to the myriad paper banners on the tables, a huge red flag across the rear balcony, and an electric sign parti-colored with the word "Tech" across the stage, many classes raised more ambitious insignias. One such was an immense pennant which required two poles to vaunt the spirit of '90. So spacious was this flag that '99 objected to being cut off from a view of the orchestra, and raised riot tumultuous. "Please take that flag down!" bellowed fifty voices in unison, until the huge banner was turned lengthwise of the hall. So jubilant became '99 over this triumph of authority that its members showered confetti over the whole assembly. For the rest of the evening little bits of cardinal and gray paper marked "'99" fell over the floor like a heavy snow.

The appearance shortly after nine o'clock of President Pritchett, who had been dining with the class of '93, caused every one to leap to his feet, and every class to vie with honoring shouts. The President was escorted into the hall by Assistant Manager Fred R. Comee, who for years, as director of the Pops celebrations, has claimed this honor. So enthusiastically did the classes continue yelling, "Prexy, Prexy, Prexy," that the President discreetly found a better vantage-point in the balcony. His presence there, smiling down upon the turbulent scene below, disclosed to the grads Mrs. William B. Rogers and Mrs. Francis A. Walker, who were honored with cheers which they evidently enjoyed. The classes also sent up honoring cheers for Dr. S. J. Mixter, president of the Alumni Association, and for James P. Munroe, president of the Technology Club, and for many other favorites.

Class honored class, counting off the years with accumulative emphasis until throats wore out. One of the most effective cheers was the chorus of sirens, a yell with a *crescendo* shriek plus a *diminuendo* wail.

So prevalent was the spirit of Tech independence that even the mascot of '93, a gray mechanical pig with cardinal '93's on its ribs, expressed its nonchalant spirit by marching realistically up and down the centre aisle, its head wagging from side to side, eloquently declaring by its movements that it cared no more for Harvard than does Gelett Burgess, '87. At the appearance of the mascot, '93



The Assembled Classes watching the "Stunts"

hoisted a banner: "A long-lost member of '93 is restored to his fellows."

With every class were restored many long-lost fellows; and the restorations made the night famous, and consumed a vast supply of restoratives.

The musical program was as follows:—

- | | |
|---|------------------------|
| 1. National March. | STRUBE. |
| 2. Song, "The Sword of Ferrara". | F. F. BULLARD, '87. |
| 3. Waltz, "Roses of the South" | STRAUSS. |
| 4. Selection, "Babes in Toyland" | HERBERT. |
| 5. March, "We're All Frank and Twenty," | F. F. BULLARD, '87. |
| 6. Tech Songs : | |
| a. "Retrospection." Air, "Auld Lang
Syne" | |
| b. "On Rogers Steps" | T. W. ESTERBROOK, '05. |
| c. "The Best School of All" (HENRY
NEWBOLDT) | JANET E. WALKER. |
| 7. Medley, College Songs | THEODORE MOSES. |
| 8. Tech Songs : | |
| a. "Take Me Back to Tech" (I. W.
LITCHFIELD, '85). Air, "Solomon
Levi." | |
| b. "Prexy for Aye." Air, "America." | |
| c. "The Janitors' Union" (G. F.
LOUGHLIN, '03) | E. B. EDWARDS, '98. |
| d. "A Stein Song" (RICHARD HOVEY), | F. F. BULLARD, '87. |
| 9. Prelude to Act III., "Lohengrin" | WAGNER. |
| 10. Selection, "Grande Duchesse" | OFFENBACH. |
| 11. Waltz, "Grubenlichter" | ZELLER. |
| 12. March, "Hoch Habsburg" | KRAL. |

After the concert the classes marched to the Rogers Building, singing and cheering all the way. All around the cornice of the popular building burned red-fire candles, which cast a cardinal glow over the gray, lowering evening. It was, indeed, all cardinal and gray in the vicinity of Copley Square.

As the alumni assembled before the steps of Rogers, Giles

Taintor, '87, mounted a box on the top steps, and proposed in order the following cheers, which were given lustily : —

The man who founded the Institute,— President Rogers.
The man who held the fort in time of trouble,— President Runkle.
The man who built up the Institute,— President Walker.
The man who took the helm in time of doubt,— President Crafts.
The man who has extended the influence of Technology,— President Pritchett.

As the name of each President was proposed, it flashed out overhead in incandescent letters.

The man who pledged his personal credit that the Institute might live,— Cummings.

The man to whom we owe much,— Munroe.

The secretary,— Tyler.

The dean,— Burton.

The Corporation.

The Faculty.

The Association of Class Secretaries.

The Massachusetts Institute of Technology.

Cheers were also given for Giles Taintor, after which the classes marched one by one to the top of the steps and gave their favorite cheers.

THE EXCURSION TO NANTASKET

Proud to be sons of Tech must have been every one of the alumni who went by the steamer "Nantasket," Wednesday, to the great family gathering of the classes along the sands of the loud-sounding shore. No form of entertainment could have made all of the graduates realize more forcibly the good fellowship, the common interest, and the homogeneous ambition of all the rival classes who, while proud of their little coteries of classmates, are more loyal to Alma Mater.

When the navigator of the steamer left Rowe's Wharf shortly after ten o'clock, feeling responsible for 1,800 important souls aboard, he called the weather foggy, and proceeded at half-speed all the way for an hour and a half. But to the happy celebrants

"It is always fair weather
When good fellows get together."

So the passage was as cheerful as a sunny morn. All over the steamer floated Tech flags, classes vying with one another for the highest and most conspicuous point to vaunt their numerals. '91 hung its banner from the top of the foremast.

When the steamer docked at Nantasket, the banner-bearers hastily disembarked, and led the heterogeneous procession across the headland to the opposite shore. While the ladies and other guests filed up the eastern hill to the Atlantic House, where the main ceremonies were conducted, the classes planted their banners along the sandy beach. Here for the first time during the reunion the classes realized what a great big collection of sons have been reared by the sturdy Alma Mater. Forming in military array, in which classes were companies, they marched by class and battalion front, deployed, wheeled, and executed various manoeuvres, which should have symbolized to each graduate the solid fighting front of the Alumni Association which they can show on any question affecting the welfare of the Institute.

As soon as the guests had arranged themselves on the piazzas of the spacious hotel to review the parade, the First Corps Cadet Band, playing spirited marches, started along the beach up the hill to the hotel. Led by Colonel Frank L. Locke, '86, chief marshal, Lieutenant B. R. T. Collins, '88, chief of staff, and Lieutenant T. W. Sprague, '87, assistant chief of staff, the classes fell into ranks, '68 having the right of line, and marched impressively up the hill. It was a beautiful sight for the guests at the hotel to observe this array of men, known all over the country for their scientific and industrial achievements, marching joyously together as one great family of brothers. With class banners fluttering before the sea breezes and the strains of the music billowing in the air above the pounding surf, the impressive procession filed around the brow of the hill to the lawn in front of the hotel. As the van hove in immediate view, cannon were fired in salute and flags broke out at the staff ends. High in the sky hovered numerous kites bearing aloft a banner: "1868—Massachusetts Institute of Technology—1904." While the band played the national hymn, the classes assembled in front of the hotel, and cheered the raising of a huge

red flag over the front of the Atlantic House. The classes then disbanded for luncheon.

After luncheon, at the bugle call of "Assembly," the classes again formed in rank, and formed a hollow square around the beautiful blue-grass lawn in front of the hotel. With the hotel front crowded with a delighted throng of ladies and other guests, the various classes in order performed the stunts which they had planned in secret for the prize competition.

President Pritchett was loudly cheered when he stepped out on the lawn and presented bouquets of carnations to the oldest and the youngest living graduates of the Institute, Professor R. H. Richards, '68, and John Delaney McQuaid, '04.

A wireless telegram from Washington was read,—

President Roosevelt is about to press the button to start the ball rolling.

With balloons floating into the heavens bearing class numerals, and amidst a din of cannon and fire-crackers, the 37 classes spent the afternoon with their various entertainments.

For '68, Professor R. H. Richards won the prize. "The class of '68 can still run on its toes," he announced, and to the delight of all, proved it. "The class of '68 can still walk a young walk," and illustrated it with a buoyant tread that any Freshman might envy. "The class of '68 cannot sing, but it can still make a noise." To this modest statement, however, the audience dissented, when the head of the mining department sang a ludicrous Irish ditty recalled from his student days.

After this '69 felt unable to do anything but cheer.

A spokesman of '70 was embarrassed to announce, "Charles R. Cross has disappointed us because he was scheduled to dance a *pas seul* before all of you, but he has incontinently fled to New York."

Good lusty class cheers showed that '71 and '72 are still of ample lung power.

'73 marched out, and boasted most immodestly, saying that their class formed the first class association of Tech, that President

Rogers was an honorary member of their association, and that they started the Alumni Association which the day celebrated.

The substantial members of '74 then marched out as if they had something very important to contribute to the program, halted, all bowed like mannikins, and fled.

Another apology was that of '75. They announced that, as Dr. Mixter, a surgeon of reputation, was of their number, they had planned to show an operation for appendicitis; but, as the victim objected, they could only sing about Bridget McGuire. The victims of the audience rallied sufficiently to applaud the next stunt. At this point one of the official megaphoners rushed into the arena flourishing a message, and read the latest report received by wireless telegraph,—

The Lawrence Scientific School has been making overtures to Phillips Exeter Academy for annexation.

With fife and drum playing a Revolutionary march, members of '76 created great enthusiasm by carrying a banner marked, "Spirit of '76,— Independence." It typified the universal feeling of the alumni on the merger proposition.

'77 and '78 marched out and cheered, a humorous feature of which was to hear the youngsters on the side lines encourage their dignified seniors by cries, of "Good boy, George," "Fine work, Charlie." The feeling of brotherhood was at its height.

The consolidated brotherhood of '79, '80, '81, and '82, marched out, cheered, and sang a song. They made a ludicrous mistake at the end of their first verse, as some loud-voiced prompter at the end of the verse said, "That's all, that's all." But the rest sang on.

'82 remained to give a cheer for James Phinney Munroe, member of their class and president of the Technology Club.

A most spirited stunt also given by this aggregation was when Dr. John Duff announced that as a student he held the title of champion walker until he was defeated by E. C. Miller. Dr. Duff and Mr. Miller then gave a walking match, extremely interesting because of the physical substantiality which has come to

both since they have become men of affairs. Dr. Duff won, and was presented with a bunch of daisies.

A special wireless despatch arrived at this time,—

It is acknowledged by the Mikado that his recent naval victories are due to his early training at the hands of Cecil H. Peabody.

When '83 marched in, they bore a banner lettered :—

We do nary a stunt
To make us grunt,
We have the mon
To have it done.

As evidence of their prosperity, these boastful spirits had green-backs pinned all over their clothing,—a temptation which nearly resulted disastrously for them. They were mobbed by the covetous younger brothers, but by skilfully forming a compact squad successfully repulsed the raid. They then gave a burlesque of a baseball game, in which none of them could catch even the large rubber ball. Their exhibition showed that they have become sadly out of practice.

Like prisoners, the members of '84 attempted to march in with a lock-step,—an attempt which looked more like the movement of a gigantic centipede. Their failure to keep step amused every one.

One of the most enthusiastically received stunts of the afternoon was the fluttering into the arena of a flock of angelic creatures soon identified as the members of '85. They had sprouted large white wings from their shoulder blades, were crowned with golden haloes and emblazoned with golden medals. From a banner they vaunted as members of their class this worthy list :—

George Washington, '85.
Benjamin Franklin, '85.
Julius Cæsar, '85.
J. G. Hadley, '85.

While the band played a negro melody of syncopated measure, their leader danced with the chorus circling about him, and juggled



A part of the Procession on the Beach



The "Stunt" of the Class of '76

and clapped a pair of rattle-bones. They then read from their diplomas the shorter catechism of the class of '85:—

Q. Was the class of '85 well known?

A. The class of '85 was known to all the world.

Q. What did the class of '85 do?

A. It built the Massachusetts Institute of Technology, and planted a tree in the front thereof.

Q. Who was alive on earth at that time?

A. The class of '85.

Q. For what was the class of '85 especially known?

A. We were known for our great scholarship and devotion to our dear teachers.

Q. What is the chief trait of our class?

A. Our unobserved modesty.

The class then repeated in unison,—

We are grateful for this grand reunion which you have given in honor of the class of '85.

'86 was also a class of unobserved modesty, for they marched out and declared that they were the first to observe class day. As a finale, they liberated a dozen little circus balloons bearing the class numerals.

The band struck up "A Hot Time in the Old Town," which was the cue for '87 to march in like soldiers, wearing caps about the size of blanc-mange cups, and carrying little pop-guns. Their captain flourished aloft two little tin swords. Drawing up in battalion front, this brave lot fired their little pop-guns, and precipitately fled.

Bearing the old banner won for the championship of the Eastern Intercollegiate Football League, the class of '88 gave a reproduction of the football game in which they defeated Dartmouth sixteen years ago with the score of 24 to 15. At that time Tech had a parade and a bonfire. These celebrations were also presented with rare fidelity. Six men of '88 were on that famous football team, and the Tech men shoved the men with D's on their

sweaters all over the lawn. For the parade, '88 again entered the arena, wearing night-gowns and tall silk hats and bearing torches. For the imitation of the memorable bonfire they danced around a roaring bomb, which spurted a long volley of sparks.

A cheering squad from '89 next held the arena. The megaphoners from the wireless telegraph station announced,—

Radcliffe College has unanimously voted to accept the merger.

The appearance of '90 to the music of a cake-walk produced great excitement. The members of the class were paired off as couples garbed in grotesque male and female costumes, and created great mirth during their prize contortions for the ornate cake. One of their very robust classmates, dressed in a black Japanese kimono, was the lucky "lady" who took the cake. The official custodian of the prize (Charles Hayden) wore knee-breeches, and was labelled, "The Way I came to Tech."

Flaunting an immense red flag, '91 marched in, keeping lock-step in triple lines. When they reached the farther end of the lawn, they had a leap-frog game across the arena.

"We won't go home till morning," came the ribald boast of the vocalists of '92; but, when they reached the centre of the field, they very naively and innocently played "Ring around a Rosy."

Great team-work was that of '93; for the class came in riding hobby-horses, each member representing one of the other classes driven by '93 in a little wagon. "They do say '93 makes a noise in the world," was displayed on a banner, which proved true.

A wireless telegram was then read,—

The lid is to be screwed on immediately after the exercises, according to orders from Washington.

The combative class of '94 hopped into the arena, every member on one leg, and eliminated one another in a chicken fight. The survivor was presented a bunch of lettuce, and ran away, crowing.

A take-off on Sousa's Band was contributed by '95 for the delight of the spectators. Seated on the ground, playing tin horns, the class made the gestures of playing while the real band furnished

the music. Mr. Sousa the Second was so really like the famous bandmaster that he was presented with the bouquet of lettuce which had already rewarded the champion game-cock of '94.

A burlesque of a faculty meeting convulsed the spectators, as a very bibulous delegation of '96 playfully maligned their favorite professors. At the conclusion of the meeting the gay burlesquers announced their adjournment by saying that they would now "be disjointed, dissolved, and immediately precipitated."

"How Dry I am," sang all of the classes at the stunt of '97. For these worthy gentlemen illustrated an experiment to show the attraction of liquids,—a scramble race for a bottle of beer.

As representatives of the Tech militia, '98 marched out in grand battle array, with infantry, cavalry on hobby-horses, with artillery of toy cannons, and with a Red Cross corps carrying a clothes-basket for an ambulance. They gave a funny drill, held a court-martial, and condemned and shot to death Howard L. Coburn, one of their members who had been guilty of over-zealous opposition to the Harvard merger. So deftly was the prisoner pierced by the volley from the pop-guns that he did not know when he was dead and had to be knocked over by the gun-butts. He was then loaded into the clothes-basket, and removed by the Red Cross brigade.

A complicated beer race was run by '99, the winner being H. L. Morse.

1900 illustrated most aptly that the merger with Harvard is not feasible. The stunt was a sack race, in which were three sets of contestants: Tech represented by a man in a cardinal and gray sack, Harvard by a runner in a crimson sack, and the merger by two men in a sack of combined colors. Tech independent won handsomely over Harvard, while the merger got tangled up and rolled all over the field.

A grave on wheels rolled into the arena when '01 was called to do its stunt. This tomb or grave—it was a box—bore the epitaph:—

Gentle Jack Scully lies buried here.

He passed from this earth in the 85th year of his life.

At the booming of a cannon (crack of doom, perhaps) the grave-lid flew open, and up rose a dignified, professor-like metamorphosis of the dramatic genius of '01. Since leaving Tech, Jack had aged eighty-five long years, and he looked amazedly about and soliloquized on the changes since his day. He recalled the men who were professors in the Institute when he was in school. One of them he quoted as saying, "It is possible, gentlemen, to see any number of moons, providing you have the right kind of a glass." He remembered that his class before leaving college had raised \$5,000 for the Walker Memorial Fund. Then the members of his class seemed to pass in review before him, and so real was his vision that no spectator will ever be persuaded that the men themselves did not march around the arena bearing various funny banners lettered with mottoes reminiscent of their days in Tech.

1902 held a leap-frog race, presenting the winners with souvenir steins. 1903 marched out in too great numbers to do a complicated stunt, so they cheered for the various Tech presidents.

The programme of stunts concluded when the band discordantly struck up Chopin's "Dead March from Saul," and 1904, over two hundred strong, marched solemnly into the arena, bearing a coffin labelled :—

1903.— Dead Ones.
1903.— Spirit Dead.

After a joyous passage back to Boston by steamer, when all the classes sang favorite Tech songs, the alumni hurried to the evening banquet.

The general orders show who were responsible for the fun :—

PROCLAMATION

Col. Frank L. Locke, '86, is hereby appointed Chief Marshal of Excursion Day, Tech Reunion, June 8, 1904.

BY ORDER SECRETARY OF WAR.

The First Tech Reunion

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TECH REUNION. EXCURSION COMMITTEE

HEADQUARTERS OF THE CHIEF MARSHAL

GENERAL ORDERS No. 1.

The following appointments are announced:—

*Lieut. B. R. T. COLLINS, '88 *Chief of Staff*
Lieut. T. W. SPRAGUE, '87 *Ass't Chief of Staff*

AIDS

F. H. WILLIAMS, '73	SOLOMON STURGES, '87
E. C. MILLER, '79	*A. T. BRADLEE, '88
F. W. CLARK, '80	*CLIFFORD M. SWAN, '99
JAS. P. MUNROE, '82	*F. W. FREEMAN, '01
ALEX. R. MCKIM, '85	*B. BLUM, '04
*A. D. LITTLE, '85	*W. W. CRONIN, '04
S. J. MIXTER, '75	<i>Surgeon</i>
*J. A. ROCKWELL, '96	<i>Ass't Surgeon</i>
R. H. RICHARDS, '68	<i>Chaplain</i>
H. S. CHASE, '83	<i>Provost Marshal</i>
H. W. TYLER, '84	<i>Press Censor</i>
*W. J. MIXTER, '02	<i>Chief of Artillery</i>
*E. G. THOMAS, '87	<i>Paymaster</i>
*H. N. DAWES, '93	<i>Commissary</i>
*C. M. SPOFFORD, '93	<i>Stunt Steward</i>
*C. G. MIXTER, '02	<i>Quartermaster</i>
*H. L. COBURN, '98	<i>Engineer</i>
Lieut. CHAS. H. PARKER, '95	<i>Signal Officer</i>
*E. S. MANSFIELD, '96	<i>Chief Aeronaut</i>
*H. D. JACKSON, '97	<i>Chief Wireless Telegrapher</i>
GELETT BURGESS, '87 }	<i>Megaphoners</i>
F. S. V. SIAS, '95 }	
F. F. BULLARD, '87	<i>Musical Director</i>
GEO. B. GLIDDEN, '93	<i>Drum Major</i>

They will be obeyed and respected accordingly.

FRANK L. LOCKE,

Chief Marshal.

THE ALUMNI DINNER

The culminating event of the reunion was the alumni banquet, held at the Hotel Somerset on Wednesday evening, June 8.

Aside from the benefits of the extreme good fellowship which prevailed, the alumni received assurances from President Pritchett that before any measure is adopted which may change the history of the Institute the alumni will be consulted. The dinner also is important in the history of the alumni, marking the first recognition on the part of the Corporation that the time is approaching when the alumni shall be more directly represented in the administration of the school.

Five hundred past students in the grand ball-room of the hotel taxed its seating capacity so fully that about fifty men were served at the Hotel Brunswick, returning to the Somerset in time for the speaking. Fraternal enthusiasm and college spirit broke out among the classes to almost as great an extent as at the "Pop" concert the night before,—songs, cheers, and choruses of tinkling glasses producing the sounds of revelry. The great white ball-room was hung around the walls with cardinal and gray banners bearing the numerals of every class from '68 to '04. The various class tables as well as the main speakers' table were decorated with cardinal peonies, roses, and carnations. In the gallery many ladies enjoyed the beautiful scene, among them being Mrs. Francis A. Walker. Samuel Jason Mixter, '75, president of the Alumni Association, presided.

The speaking began at 9.50 P.M., and continued until after midnight.

Following is a verbatim report of the speeches : *

DR. SAMUEL J. MIXTER.—Members of the Alumni,—In welcoming you to this, the last of the entertainments provided by the committee, it is both my duty and pleasure, as well as my privilege, to say a few words of

* Excepting three paragraphs of new matter which have been added to President Pritchett's address. The manuscript from which these were taken was received too late to be substituted entire.

congratulation on the success of this reunion. [Applause.] May it be the first of a long series of similar occasions which shall be as successful as this. [Applause.] The growth of the Alumni Association of the Massachusetts Institute of Technology is, it seems to me, one of the most encouraging things in connection with the Institute. [Applause.] Starting some years ago as a comparatively small body, it has rolled on until to-day your line reached the length of Nantasket Beach. [Laughter and applause.] To one standing at the head of that line, as some of us did, and looking back at that body of men, realizing the extent of its influence, the country which it represented, the distance from which many of its members had come, one could not but feel that there was something behind the institution which was greatly to its credit and its power. [Applause.]

Gentlemen, this may be self-laudatory, because I speak for you; but the power that the Alumni Association has to-day is nothing, I believe, to what that power is to become. [Applause.] Any institution must depend upon its alumni for its support, for its backing; and I know that the Institute of Technology [great applause],—I know that the Institute of Technology can depend upon its loyal sons to back it loyally. [Renewed applause.] I trust that in the future some way will be found by which this body can be represented officially in the board of government of the institution. [Applause and cheers.] Not that we do not now have on that board most loyal sons of the Institute, who represent us loyally and faithfully; but, as in all large institutions, there should be an official recognition, I think, of the large body of graduates, and that, I trust, will come in the future of the Institute. [Applause.]

Gentlemen of the class of 1904, it has always been the privilege of the President, at the spring reception, to welcome the graduating class of the Association. I welcome you to-night; and when you, gentlemen, are old enough to stand at the head of your procession, as you file up as we did to-day, may you look back on as splendid a lot of men as I did to-day, and a much longer body of them. [Great applause and three cheers for the M. I. T. and the class of '04.] But, gentlemen, this is a birthday. The class of '04 was born a day or two ago. I have here a telegram from Annapolis: "Greetings and best wishes from the youngest Alumni Association, the Annapolis Association of Maryland, organized June 8, 1904,"—to-day. [Applause.]

I have in my hand various letters of congratulation and regret at not being here. Some of the names are those familiar to all of us,—Grover Cleveland,

President Drown, the Rev. Edward Everett Hale [applause], Dr. Charles D. Walcott [applause], Andrew Carnegie [applause].

Gentlemen, I know that you are anxious to hear, not from me, but from the speakers of the evening. I regret to state that the one who expected to be here to represent one of the first helpers of the Institute—that is, the State of Massachusetts,—his Excellency, the Governor, is not able to be here, and sends his sincerest regrets. The city of Boston, I am sure, is proud of the Institute of Technology. The city of Boston is also proud of its mayor [applause],—a mayor with a backbone. [Applause.] Gentlemen, I introduce the Hon. Patrick A. Collins. [Great applause and cheers.]

MAYOR COLLINS.—Mr. President, at this hour and in the presence of the ambitious programme to follow, the injunction of Thomas Carlyle is quite appropriate: “Under all speech that is good for anything there is a silence that is better.” [Laughter. A voice, “Louder.”] Wait till I get going. [Laughter.] Give a modest man a chance. [Renewed laughter.] You need not require and you do not require an official welcome to Boston. Some 3,000 miles away from here municipalities have been in the habit of giving distinguished guests what they call “the freedom of the city.” It was totally unnecessary here, because you took it. [Laughter.] The town for the present is yours. [Laughter.] And, while you can’t take it away with you, you take all that is portable, apparently. [Laughter.]

It is a privilege to speak for the Commonwealth in the absence of the governor, whose enforced absence I regret more than anybody else, because you bear the name of the Commonwealth,—the Massachusetts Institute of Technology. [Applause and cheers.] But you are essentially a Boston institution. [Renewed applause.] The Institute of Technology, whether it be called the Massachusetts or whether we drop Massachusetts, is an institution by which Boston is identified in the world of science. [Great applause.] It is one of, if not the chief of all our jewels [applause]; and the men who have gone hence throughout this country and further into the world have done credit to this town, and have made its name illustrious, more illustrious than it would otherwise have been. [Applause.] Boston, therefore, is proud of the Institute of Technology; and while there have been raised some contentious subjects as to how the Institute of Technology shall go on by and by, whether you make a junction with any other body [cries of “No, no!” and groans] or whether you remain precisely where you are and where you have succeeded [“Good, good!” and applause], under any and all circumstances, for the sake of Boston and for the sake of yourselves, remain a Boston institution. [Uproarious applause and cheers.]

It is totally unnecessary, therefore, to welcome you to Boston, because you have come back like a bird to its original nest. You have honored Boston by coming here to have the first great gathering of the clans [applause], the Alumni of the Institute of Technology. Come again. You can't do better. [Applause.] Come again, and you will be welcome. Come again: you will still honor Boston more, and Boston will honor itself in giving to you the most cordial of all welcomes. [Applause and cheers for "Collins."]

THE CHAIRMAN.—Brethren, no ship can have a successful voyage without a true pilot; and the Massachusetts Institute of Technology, I am sure, has that in its President whom I am about to introduce to you. He needs no introduction, but I am sure President Pritchett will have much to say that is of the most vital interest to us all. President Pritchett, gentlemen. [Loud and prolonged applause and cheers for "Pritchett."]

NOTE.—After the REVIEW was in paged proof and the President had seen the verbatim report of his address (amended as stated in the foot-note on page 350), it was his urgent request that the manuscript furnished by him be substituted for the stenographic report. This has been done, and to this change is due the irregularity in the pages.

Alumni, Former Students, and Friends,—In the name of the Corporation and of the Faculty of the Institute, I greet you in this visitation to the academic home of your youth. No affection which you can show to your Alma Mater can be lost sight of by her. To-day she gives back to you in full every assurance of affection which you can offer to her; and I express the common hope of all when I say that we shall look to other reunions in other years as the seasons when we may renew and refresh those common ties which bind you to the Institute and to each other.

Some of you have perhaps not seen the Institute for years, and have gained a new idea of her growth and her power. It would be a pleasure at such a time to sketch the more important steps which have been taken since the days when President Rogers planted the mustard seed which has grown into this great tree, to speak of the work of Rogers and Runkle and Walker and of Crafts. It would be an inspiration to recall the deeds of Nichols and of Holman and others of blessed memory; and no doubt you have recalled all these things in your talk of these last three days. But the present always crowds out the past in our talk, if not in our memory; and during these three days there has been one topic which, above all others, has been in your thoughts and in your talk, and that is the resolution adopted by the Corporation of the Institute on May 4, and which looks toward a possible co-operation with Harvard University. You have a right to expect from me on this occasion some statement of the considerations which moved the Corporation to take this action, and some expression as well of my own attitude toward it. Let me spend such time, therefore, as you can give me to speak briefly and frankly on this matter.

Those among you who belong to the class of 1904 know that during these four years since I have been with you it has been my custom to preach to the student body in an amateur way on many questions which have come before us, and which have seemed to be of moment. If I might dare to preach to you in the direct and homely fashion in which I have dealt with students, I should take for my text the last half of the twenty-seventh verse of the fourteenth chapter of St. John, which runs, "Let not your heart be troubled, neither let it be afraid." And, if I may not preach to-night, I may at least, perhaps, use this as the thread which shall run through my talk.

The governing body of the Institute consists of a self-perpetuating body of fifty men. The authority and interest of the Commonwealth is recognized by the fact that the Governor, the Chief Justice, and the Secretary of the Board of Education are members *ex officio* of this body. Your chairman has expressed in his introduction the wish that the great army of alumni and old students might be heard in the councils of the Corporation, not only through alumni chosen in the ordinary way, but by alumni directly chosen by this association. I wish to say that I am heartily in accord with that wish, and more than a year ago made a similar suggestion. Such action would require legislation, but I should be glad to urge any measure which might give to the alumni a representation in this way.

The Corporation tries to consider as best it may the somewhat diverse interests of at least four groups of persons: the alumni, upon whose reputation and work the fame of the Institute rests; the Faculty, whose ability and devotion alone can make a school great; the general public and the Commonwealth, whose good will, respect, and cordial support are essential; and last, but by no means least, its students, for whose interests, not only in the present, but in the future, the government of the school is bound to provide in the best possible manner. The real interests of all four of these groups are the same, and that is to see that the Institute obtains year by year a higher place, that it grows steadily in intellectual and moral leadership. But, while the ultimate ends sought may be the same, it is easy to understand that differences of view-point may easily exist as to how these ends may best be accomplished, to say nothing of the fact that the members of the Corporation have serious convictions of their own. Now and then questions of large general policy arise with which the Corporation must deal, and which affect at once alumni, Faculty, the general public, the student body of to-day and of fifty years hence, and the Corporation. Such a one is that which lies now before us.

The Institute of Technology stands to-day before the world, alert, full of hope, with the expectation of leadership. Why, under these circumstances, has our Corporation taken the initiative in asking for a conference with Harvard University, looking toward a combination of effort in technical education?

Let me try to state briefly the reasons which impelled the Corporation

to take this action. The problem of high-class technical education, such as the Institute offers, has changed enormously in the last fifteen years; and all the changes that have come have served to make it more costly. The differentiation of engineering subjects has made not only a constantly growing load for the student, but it is becoming more and more difficult to bring into a four years' course the elements of a general education and a technical training. Everything points to the fact that we are in a transition stage, and that a new step must soon be taken in this country in technical education: either the courses must be lengthened or some of the strongest schools become graduate schools, or some other means must be taken to meet the changing demands for education and for research in technical schools. But any one of these changes means the addition of great cost.

In all this the Corporation has had continually in mind the ideal that the Institute was to be, not one of two or three great technical schools, but that it should aim for leadership in this branch of education, that it should always be able to attract the student who wanted the best from any part of our country and from many foreign countries. I have sometimes been asked why the Institute of Technology should care to draw students from outside Massachusetts and New England, why we should desire to have the student from Missouri, from California, from England, from Australia, from Japan. The answer to this question is clear, and it is this: the presence of students from the whole world in a great institution of learning is the best barometer of its alertness and its efficiency; it is the surest sign of intellectual leadership which an institution can secure. Whenever our great institutions of Massachusetts, whenever Harvard and the Institute of Technology, cease to attract men from the West and from the South, they will cease to offer to the student of Massachusetts and of New England the highest educational attractions. Not only is this true, but in taking men from the whole world one brings in energy and alertness and initiative as well as gives it out; one adds to the strength and the industrial efficiency of the State and of the region at the same time that he develops the strength and the industrial efficiency of the remote regions. A great educational institution is like a great magnet, in that it grows in strength when it carries its full load.

In seeking to meet this ideal of leadership, the Corporation has boldly spent the income and some of the principal of the funds of the school to bring up its facilities to modern requirements and to bring to its teaching force the best men. It has found the competition in the field of technical education constantly growing sharper. Not only do Cornell and Columbia offer facilities very similar to those which the Institute offers, but the group of great State universities of the Middle West, with the income of the State behind them, are beginning to offer to the student facilities rapidly becoming comparable to those of the strongest institutions of the East, and at a nominal tuition. If the student from the West and the South is to be attracted to Boston against the educational tariff so established, it must be

by constantly increased facilities; and leadership will for this reason be more and more expensive in the future. It would seem that the competition thus inaugurated was all we needed.

It was under such circumstances that the great university in this same community with ourselves received a large sum of money specifically devoted to the establishment of technical instruction exactly like that which we offer. It did not seem to the Corporation that the establishment of a second strong technical school in this community, under such auspices, could fail in the end to endanger the leadership of both. One of the express conditions of this gift is that the most perfect mechanical laboratory be established, that the best mechanical engineers be invited to its professorships, and that they be paid higher salaries than are paid by other institutions. This is exactly what we are trying to do, with the exception of the higher salaries. Now is this arrangement a desirable one? Will it not in time result in a division of the prestige and of the leadership in the teaching of mechanical engineering? And can any one doubt that, dropping all question of mere cost and retaining all the teachers in both laboratories, the two schools of mechanical engineering would be far more attractive to the student if pulling together than if pulling separately? Will the Commonwealth of Massachusetts and the city of Boston be willing in the future to furnish the funds for such a rivalry?

It was in view of such responsibility as this that the Corporation of the Institute felt it wise, before embarking on such a course, to ask the question of the Corporation of Harvard, Is it not possible for these two institutions to co-operate rather than to compete in technical education, and on terms that will leave to the Institute all the essentials of its life and its growth, and which may leave to it, in this community at least, an undivided leadership?

This is no place to present the arguments for and against such action. I am aiming now simply to indicate what the purpose was which moved the Corporation. I ought to say one thing farther in this connection,—for I were unworthy to be your President if I failed to take my fair responsibility in this matter,—and that is to add that I am in entire accord with this action. I believe that it is wise to ask this question at this time. And, so far as I shall have to do with it, the question shall be answered fairly and with a sincere effort to serve the larger interests of the Institute, of education, and of the Commonwealth; and in the end the interests of all three will be found to lie along the same path.

I know that to many of you this action is distasteful. It is not pleasant to find one's action, however conscientious it may be, misunderstood and misinterpreted. I believe that my views, when understood, are not very far from yours. I have been a citizen of Boston only four years; but I value my citizenship as highly as any man could, and for no reason more than this, that in Boston a man may, if he be frank and sincere, say even

the unpopular thing, and still be tolerated. After all, we all seek the same thing, we are all going to have a part in the decision; and, if we may have patience, we shall probably not be far apart in the end.

Just one word more as to the intention of the Corporation. It has never entered the mind of any of those gentlemen to settle this matter in a corner, to go to the consideration of any definite plan without giving to the members of the Faculty and to the alumni a full chance to record their deliberate opinion and conviction. If any such definite plan can be compassed, such as the resolution passed by the Corporation contemplates, it shall go to you in full time, that you may express and record your opinion. The terms "merger" and "absorption" have no significance in such an arrangement.

You ask me: Is it possible to make such an arrangement? Is it possible to have a *modus vivendi* which shall bring about co-operation and still leave to the Institute the name and the fame which is its due and the freedom to grow as the demands of education and industry may require?

In answer to this question I can only say, I do not know. I have no scheme prepared. The answer to this depends on the action of several groups of men, yours among the rest. Those who have been appointed to confer in the matter have scarcely got further than asking the mere question. I do not know what legal difficulties may lie in the way. But I believe this: I believe men in this community, whether they belong to one college or to another, have a just pride in the Institute of Technology. Men in Boston believe that the Institute has earned the right to live and to grow and to flourish; and I shall be disappointed if out of this community and out of the two boards of government of these great institutions there shall not be found enough organizing power, enough high-minded and unselfish patriotism, to accomplish both of these ends.

Just so soon as there is any sort of tangible plan ready, if such prove possible, it shall be submitted to members of the Faculty and to alumni for an expression of opinion. In advance of this let me say just one word or two while we wait; and in the saying of this I shall have occasion to refer back once more to the words of my text.

First of all, let us be serene and sweet-tempered in this matter. It is on such occasions as this that we are able to show to the world that freedom from partisanship, that soundness of judgment, that desire to know the truth, which we claim for the scientifically educated men. This is a great question. It is far-reaching in its importance, not to you alone or to this community, but to education in our country. What is needed in its consideration is not partisanship, but patriotism, not suspicion, but open-mindedness, not fear, but courage. We should not abate any particle of devotion to the past, but for very reason of it let us strive for a clear vision of the future; and, while we give due weight to sentiment, let us not forget that what is most needed is clear thinking. Your answer to this question,

when it shall come to you, is to be no less a test of your qualities than it is a test of ours in the Corporation and in the Faculty, when it shall come to us. We all seek the same thing, the good of the Institute, its glory and its immortality; and we shall in the end come to very nearly the same conclusion if we may keep our hearts untroubled and our brains cool.

Let me call attention next to the second part of my text. Brethren, if you can't keep your hearts from being troubled, at all events keep them from being afraid. I have only been in the Institute four years, but I have the faith to think that it is great enough and strong enough and virile enough to stand up on our side of the Charles River and join hands with Harvard University on the Cambridge side, if it wishes to, without any fear of being absorbed or losing its identity or its name or its traditions or any other thing which is precious or valuable. Only the weak tremble before the strong: only weak nations hesitate to co-operate with strong nations. Let us take counsel to-day of our courage, not of our fear; of our faith, not of our suspicions; and let us go forward serenely into the future in the confidence of our own strength. Brethren, let not your hearts be troubled, and, most of all, let them not be afraid.

It is always easier to lead men to war than to peace, always easier to prevent an alliance than to make one, always easier to get men to compete than to co-operate; but I believe that peace is more honorable than war, that friendship is better than rivalry, that co-operation is more desirable than competition. Whatever argument may be made in favor of the plea that two institutions will be all the greater if they compete with each other, it will still remain true that leadership will be endangered, whenever two strong and great institutions in this community undertake the same rôle. Competition between our American institutions has given in the past a certain stimulus, but it has also been the parent of innumerable ills, the author of waste, and still more of insincerity in education. Such competition has seldom led to the noble emulation of the scholar. It has been forced almost always along the lines of purely material comparison; and, whatever may be said on one side or another, the fact still remains that two great schools of technology in Boston will be all the greater if they pull together than if they pull separately. Whether such a co-operation be feasible or not I cannot say; but, looking to the larger purposes of education, I cannot doubt that the co-operation of these two great American institutions for a common end, on terms that shall be just and generous and fair, would bring forth fruits for civilization and for education sweeter than those which competition and rivalry can offer.

And I will say one word more in this connection. If a conference of the sort which has been asked for cannot be carried out between two great institutions of learning on a high plane of mutual respect and regard, if it must be reduced to the ordinary business level of haggle and barter, then it was a mistake to have attempted such an inquiry. I, for one, am not

ready to admit that our civilization is on this level. We of the Corporation of the Institute of Technology have asked a fair question of Harvard University. We believe we are strong enough to ask it without being frightened, and I believe we shall have a fair and generous answer.

A deal has been said in this matter as to different theories of education and of the advantages of one over the other; of the technical school in connection with a university and apart from it; of the advantage which might come to the Institute by becoming purely a graduate school or by placing an arbitrary limit upon the numbers of those who may enter. With regard to all these matters of educational theory I want to say that, the more one knows of the experiments now going on in our own country and in other countries, the less ready he is to dogmatize in such questions, the greater hesitation he has in committing himself to any educational specific. An institution of learning is great in proportion as it is strong, but not boastful, earnest, but not narrow, alert, but not intolerant, alive with energy, but warm with sympathy. It is by the possession of such a combination of qualities that it becomes not only an efficient agent for the training of men, but becomes also a centre of intellectual and spiritual power; and this is true greatness.

This is not the occasion to enter into a discussion of these educational questions; but perhaps you will pardon me if I refer briefly to one suggestion that has been made apart from this particular discussion. This is the idea that the Institute follow the plan of a famous foreign school and arbitrarily limit the number of students who may be permitted to enter it.

I do not believe any man appreciates more keenly than I the dilution of scholarship which often comes from the growth of numbers. Nor do I object to entrance requirements which shall keep out those who are incompetent and unprepared. I should be delighted to see on the part of all colleges a more rigid enforcement of the present requirements. Nothing, indeed, could do more to raise the standard of scholarship in our colleges than the requirement that college students should speak and write the English language with fair proficiency. A rigid enforcement of this requirement would put a marked limitation on numbers for some years to come.

But all our experience shows that a raising of requirements or greater strictness in enforcing them results in a very short time in an increase rather than a decrease in numbers. In no other direction does virtue have its own reward so quickly; and the problem of growing numbers must be met by some other means. My conviction is that the real way to deal with it is not by an arbitrary limitation of numbers, but by organizing our institutions so as to deal efficiently with a growing registration. The problem of organization is the problem of the civilized world to-day, and particularly of our own country. Every department of our national life has to meet it. There is no reason why the universities and the technical schools should not take their part in its solution; and the problem of giving instruc-

tion in one place to two thousand students instead of to one thousand is purely one of organization. It cannot be met by adding young and inexperienced instructors at the bottom of the instructing staff; but an organization fairly planned to meet the problem of growing numbers, where one or two or three men of high standing are associated in teaching the same subject, presents possibilities and attractions which would not be offered in a smaller institution. I believe that the solution of our problem of numbers lies this way, not in that of arbitrary limitation. There is, to my thinking, something un-American and something of a confession of weakness in the attitude which turns away the well-prepared student on the ground that we are not able to deal with the larger problem. And, if it should be finally decided to do this, if it is ever deemed necessary to say no to the well-prepared student who knocks at our door, on the plea that we have reached our limit, then I should propose to adopt the custom of the business firms, and change our name to the Massachusetts Institute of Technology, Limited.

In closing, I come back again to the words with which I started, and which are really my only message to you to-night, a plea for patience, for good temper, for straight thinking. All the world knows that we have strength and earnestness and energy: let us show also that we have calmness and courage and patience.

I am not an alumnus of the Institute, and I have often regretted that fact. You cannot be any more conscious than I am of the difficulty under which I labor in coming to you as the successor of men like Rogers and Runkle and Walker and Crafts. Yet, so far as a man of moderate ability may do so, I have given myself heartily and without reservation to your work. Its glory and its success are of as much concern to me and to my colleagues on the Corporation as they can be to any one of you. And I can say to you in their name that this matter shall not be settled in a corner. Whenever any plan of co-operation with Harvard University is formulated, it shall be communicated to the members of the Faculty and to the alumni, and their full and deliberate opinion obtained. All we ask is that, when this matter does come to you, it may be dealt with soberly, fairly, wisely, and in full view of all that is involved in it. And in the mean time, brethren, let not your hearts be troubled, neither let them be afraid.

THE CHAIRMAN.—Gentlemen, Chicago and Boston have never been merged, but they have been closely affiliated. I take great pleasure in introducing to-night the president of a sister institution in a great city of the West, the Armour Institute of Technology. Gentlemen, President Gunsaulus. [Great applause and cheers for Gunsaulus.]

PRESIDENT GUNSAULUS.—Mr. President, there is nothing which shows the remarkable elasticity of the Massachusetts graduate so much as the proved

ability to pronounce my name. I was actually two years trying to do it before I could do it myself. [Laughter.] Mr. President, if I were so good a preacher as the President of the Massachusetts Institute of Technology, I surely would not be here to-night. I would have a congregation large enough in Chicago to remain at home. [Laughter and applause.] But I bring to you to-night from the Armour Institute of Technology more cordially and more enthusiastically than I could have possibly done before this speech of Dr. Pritchett's the hearty and earnest congratulations, the proud, glad thanksgiving to God for the Massachusetts Institute of Technology and its forty years of glorious history. [Applause.] Fifteen hundred young men under the roof of our institution have told me to bring to this institution their love, their gratitude, their pride, and to ask you to realize in some small degree how closely associated with our beginning, how certainly bound up with our future, is and has been the great institution in whose honor we are assembled to-night. [Applause.] I started out from home as a preacher, I confess, and I did not know quite what sermon to bring with me. I had one on "And yet I am not alone." Then I had another on "Whom the Lord hath joined together, let no man put asunder." [Laughter.] Then I had one on "Blessed are the dead who die in the Lord." [Renewed laughter.] But I brought neither one of them. Gentlemen, we do live in the West, and we have all the comforts and satisfactions and inspirations of Christian civilization, perhaps. [Laughter.] But one thing is sure: if there is an institution on the face of the earth that sympathizes with the Massachusetts Institute of Technology to-night, with its President, its Corporation, and with Harvard University, it is the Armour Institute of Technology. [Applause.]

Now the fact is we want just what you want, and we are so eager about it that we are going to have just what you are going to have, strange to say. [A voice, "Take Harvard." Laughter.] Well, we have taken a good deal of Harvard. [Laughter.] We have taken a good deal of Harvard—[A voice, "Take it all." Laughter.] We will see how this merger comes out. We will take Harvard if you will adopt her. [Laughter. A voice, "What becomes of us ?"] That is our program. We are ready to adopt any stray university that may have anything to offer. [Laughter.] And with characteristic Chicago modesty we just suggest a few things that may help you along this path against whose thorns we have come and against whose stones we have barked our shins. When I got home from Europe a few years ago, I found from the newspapers,—and no imagination, even that of Dante or Milton, can compare with the imagination of a Boston or

Chicago newspaper on educational topics [laughter],— I found from a newspaper that we had been or were about to be swallowed by the University of Chicago. It was almost impossible. I knew that, but the newspaper did not know it. The truth is that the University of Chicago,— and I greatly respect its president and the enlarging capabilities of this institution of learning,— the University of Chicago had been doing so much of that, that it was largely in the same situation as the small boy at the Christmas dinner. He had eaten up and down the entire program, so far as food was concerned. And a lady who had never had any experience with boys of this sort came to him in a most Christian manner, and said, “ My dear little fellow, won’t you have some more? ” “ No.” “ Can’t you really take some more? ” “ No.” “ Now this only occurs once a year. Take some more. Let me get you some cake.” “ No.” “ Couldn’t you really take some more? ” “ Well, madam,” said he, “ I might chaw some more, but I can’t swaller no more.” [Laughter.] There is marvellous safety in a situation like that.

Now the only other kind of safety I know in case of a so-called merger, or swallowing process, is described in the situation of the missionary who found himself on an island, living with cannibals. They gave him everything they had that should fatten him up, and they looked forward to a great day when he should be fat enough to eat. One day they concluded to swallow him,— affiliate him [laughter],— and the great chiefs gathered around him with their knives in the air; and the poor fellow was nearly scared to death. But he had his wits about him; and he said to the chief, “ Look here, you are going to bind me to this tree? ” “ Yes, sir,” and they bound him to the tree. “ Now,” he said, “ before you do anything more, I want you to try me. You don’t want to eat me.” And he pulled up his trousers’ leg, and said, “ Take your knife, and dig in and try me.” So the chief took his knife and cut off a piece, and he tasted it and did not like it; and he passed the fragment to the next man, and the next, and they did not like it. And all the chiefs were disgusted, and they let him go, for he had a cork leg. [Laughter.] Now that is one way of being safe. If you had any cork legs about you, nobody would want you at all. But the very fact that this is the Massachusetts Institute of Technology, is related to this vast problem of educational co-operation, the very fact that men have sense enough to discuss these things before they throw them overboard, the very fact that you have a Corporation wise enough and a President sagacious enough to see that this question is a great public question, not a Boston question,— it is the question of all education throughout the United States,

the most vital and inspiring process of education,—the very fact that this matter is up for discussion at the end of forty years means that the Massachusetts Institute of Technology will now take a new step, that her alumni will come to her support with great financial gifts [great applause], that, while men are talking about union with Harvard, men will come into union with their pocket-books, and this nation will realize that we owe more to the Massachusetts Institute of Technology than to any other educational foundation for the future of that large republic concerning which we all dream,—that we owe more and will render more in the days that are to come. [Applause.]

I come to you to-night because of the sincere interest which—I wish we could call her the daughter of the Massachusetts Institute of Technology—which the Armour Institute of Technology feels in this great, heroic figure. Beautiful memories come back to me to-night, men of the Massachusetts Institute. I remember the day when, as a pastor out here in Newtonville, I wondered if there might not be a larger life than that of the pastor; and I walked past this Institute for two years, at the end pledging God that, if I ever had an opportunity to guide money in the Middle West, it would be for the rearing of an institution which would be to Chicago what this Massachusetts Institute has been to New England and to all the country. [Applause.] I remember a far more important day,—for I have been as poor as any minister in the divine presence,—I remember the day when Mr. Armour, sixty-two years of age, on a very hot day, came down this street, went over to the Massachusetts Institute of Technology, and entered Rogers Hall, where we talked with that great soldier, that great economist, that great educator, Francis A. Walker. [Uproarious applause and cheers.] I remember when we walked and talked with your Professor Crafts [applause], to whose wise words with regard to our institution we owe much of our power to-day,—if we possess it. [Applause.] I shall not forget when we paused in the presence of a portrait of Runkle, and Mr. Armour said, “I am ashamed that such a great scholar as that should be so nearly unknown by myself; and, if God gives me the strength, I will make it impossible for a boy in the West not to know the name of Runkle.” [Applause.]

But I remember best when we paused in front of the square jaw, the intelligence, the fine spiritual features, the embodied and personified manhood of Rogers. [Applause.] And I remember, after leaving this institution going to Young’s Hotel. There was written then over the first building of the Armour Institute “The Armour Training School.” We had young ladies there, classes in domestic science and all other interests that an absorb-

ing and aspiring humanity desires in the latter part of the nineteenth and the early part of the twentieth century. We were doing a little of everything. I had suggested to him that that name had better come off. Under the inspiration of the Massachusetts Institute of Technology he didn't sleep much that night,—thank the Lord, not always the sinners keep awake,—but he arose in the morning and came to my room, and said, “We will call it the Armour Institute of Technology, and I will give another million.” [Applause.]

The motherhood of this great institution extends all over the West. Why, when I heard these sweet sounds that are called noises by the Chicago River, I recognized how much this institution had done for the West, for there is a certain prairie sweep in this meeting to-night ; and, whenever Armour Institute wants sagacious counsel, strong guidance, fraternal help, Mr. President, we ask one of your boys to come to us. [Applause.] For forty years you have set the pace. What of the next forty years ? Brethren, we are engaged in the work of education, whether we are in the Armour Institute or the Massachusetts Institute or any other institute in the field of engineering, as no other set of men in the world. To-day the American people need what you, more than any other set of men, may impart to them,—a grand sense of the value of order, a noble conception of the divinity of law. [Applause.] Other men may study their languages and touch the laws in a literary fashion, other men may deal with realms of imagination and fancy, other men may have to do with those facts that have had their most important and brilliant setting in other centuries ; but I tell you the men who are to teach law and loyalty to the American people are the men whose business it is to touch the powers which are most in interest in American thought and American life. You come from your laboratories, where you have to obey law to be free. You come from the making of your machines, when it is made certain to you that the measure of your liberty is the measure of your regard for law. The appeal that we heard to-night to your sense of righteousness, to your idea of responsibility, could never have been made without such eloquent hearts to respond as have been trained in the Institute of Technology. [Applause.]

I speak to-night as a minister. I follow — I trust in no uncertain way, but with humility — one who believed in the education of the head, the heart, and the hand ; for Jesus was a carpenter. I look upon that great civil engineer of Judaic history with no less admiration because he was with us,—Nehemiah, civil engineer of Jerusalem, who said, “I am doing a great work, and will not come down.” You can't come down to any lower

ideals. The Massachusetts Institute of Technology cannot come down. We look upon this institution, all of us, as the one that shall be the pioneer in research. We are very busy in the West. We have a lot to do in Chicago. Our institution is not twelve years old, and we have 1,500 men to deal with. We are crowded with men who must get out to work. Here in the quietude of Boston, where men can brood, where actually it is not considered improper for a hen to sit on her eggs long enough to hatch them, you can have research, meditation, time to find out the great facts of science.

Gentlemen, the pattern that was made in the mount, the mount of vision, the mount of scholarship, the mount of high ideals, that was the pattern for the tabernacle, holding the children of Israel by its power, rallying them by its influence until they were free; and it is technical education, exemplified and illustrated by the Massachusetts Institute of Technology, that shall furnish the pattern for the tabernacle. We will follow on until we have freedom under the law. [Applause.]

THE CHAIRMAN.—Gentlemen, I have pleasure in introducing next Colonel Livermore, of the Corporation. [Applause.]

COLONEL LIVERMORE.—Gentlemen, Dr. Samuel Johnson did not like Scotland, and in his first dictionary of the English language he defined "oats" as a "grain used in England to feed horses and in Scotland to feed men." A Scotch commentator added, "And in England they raise verra goot horses, and in Scotland verra goot men." [Laughter.] The last part of that comment suggests the position of Massachusetts in industry. The one thing which she finishes for export from an article produced on her own soil, or imported without a tariff, is men. [Applause.] And for that reason the industry of education in Massachusetts assumes an importance which it attains in hardly any other State. Here in Boston or in the suburbs there are 10,000 students in four universities and colleges, of whom about 5,000 come from other States or countries. In the conservatories of music and the art schools, and under private instruction in art and music, in and about Boston and in the other colleges of Massachusetts, there are at least 5,000 more students. It is natural that this industry, the most important in Massachusetts, should attract the attention and support of all men in Massachusetts interested in her prosperity and welfare; and this is true of technical education especially, for upon the knowledge, intelligence, skill, and organizing ability which is applied to those other material industries of Massachusetts depend their success and the future prosperity of the Commonwealth.

I have no doubt it was largely the conviction of this fact that has led to

the constitution of what is called the Corporation of the Massachusetts Institute of Technology, officially known as the Board of Trustees. Upon that board are merchants, bankers, capitalists, engineers, railway managers and directors, chemists, ship-owners, scientists, architects, manufacturers, lawyers, and doctors. The governor of the Commonwealth, the chief justice of the Supreme Court, and the secretary of the Board of Education are members *ex officis*. In the beginning there were no alumni of the Institute of Technology to select a governing board from, and for that reason, I suppose, the constitution of the Institute provided for the selection of a board which should be self-perpetuating until that constitution should be altered. And, when a vacancy has occurred in the Board of Trustees, they have selected some one best fitted in their judgment to fill the vacancy. I deem it a peculiarly fortunate thing for the Massachusetts Institute of Technology that so many graduates of that great institution, our neighbor across the river, have been willing to serve upon the board. [Laughter and applause.] I wish to say here that in my judgment there have been no more zealous and loyal supporters of the Institute, no men who gave more labor or were more liberal in their contributions, than those same gentlemen, graduates of the University. [Applause.]

It will interest you, gentlemen, to know how the board is constituted with reference to the graduates of the Institute and Harvard and other institutions. There are forty-six members. Fourteen only are graduates of Harvard alone, nine are graduates of the Institute of Technology, and one-half, twenty-three, are graduates of neither of those institutions. I don't think there is any reason to fear that a board constituted with a membership such as I have described will lightly consider, or with prejudice decide, any question vital to the fortunes of the Institute. I am not entitled to give the opinion of other members of the Board of Trustees upon the question which is uppermost in your minds. But I think I may safely and with propriety say that they regard themselves indeed, what they are officially called, as trustees,—trustees, primarily, to preserve and not to destroy the Institute. [Applause.] And I will add that I think I know the sentiment is not wanting in that board among some of the members that they are not trustees of the cause of education in general, but trustees of this particular instrument of education. [Applause.] And I believe that no warrant will be found for obscuring or diminishing or extinguishing the Institute of Technology in all its individuality, short of a well-grounded fear of its decadence or extinction by other causes. I think that the question to which I have referred will be decided, as far as the Board of Trustees have power to decide it,—

and it is a question which in itself cannot be determined here at once,— will be decided calmly and with a view to the best interests of the Institute ; that whatever differences arise in the board, if any do arise, they will be differences of opinion, and not differences growing out of the quality or the quantity of their loyalty to the Institute. [Applause.]

I have seen a good deal in the papers the last few days of eloquence and emphasis which have been devoted to this question. I hope I shall not be thought to have transgressed when I suggest to this body that there is something that is more eloquent than speech in this matter. The whole origin of the raising of the question to which I have referred is a financial one: it is the fear that the Institute will not, without taking some action for co-operation, have the necessary financial support, that has led to the raising of this question. Now, gentlemen, the most eloquent thing which can argue in favor of independence and maintaining the individuality of the Institute is that which the proverb says is the root of all evil [laughter and applause], and which another proverb commends as the best horse jockey in the world. [Laughter.] And it has seemed to me, as I have read of the deliberations of your class associations, that your energies needed direction. You need to apply your energies to affording aid to the Corporation and to the President in maintaining the independence of the Institute of Technology. [Applause.] Combined effort, concerted effort, and well-regulated effort, which shall lead you to pull together, is what is needed to insure what is uppermost in the hearts of most of you, if not all of you. [Applause.] It would take a pledge of not a great sum from each individual of the 3,000 alumni to make the Institute feel as independent as it ought to be. [Applause.] It is not money for the benefit of the board of government, or for any individual, but for the Institute, to keep it at the best, and to make it in the future the leader of all technical institutions in this country. Our President has quoted to you a text, the burden of which was courage; and I would commend to him and to you a text from Shakespeare, which he put into the mouth of the English king, as he was arraying his forces for the forlorn hope. Said he,—

“ Men, 'tis true our peril's great,
But the greater our peril, the greater should our courage be.”

[Applause].

THE CHAIRMAN.—Gentlemen, a telegram from Seattle: “To the Alumni Association, Hotel Somerset, Greetings to Tech from Puget Sound. Here's long life and continued independence. We wish we were with you.”

Gentlemen, since the days of some of us, a new office has been established in the Faculty,—the office of Dean. I have the pleasure of introducing Dean Burton, the friend of the boys. [Applause.]

DEAN BURTON.—Mr. President, this is 1904, and I wish to say a word for '04, because it is their day. Two hundred and thirty-one received the diploma of the Institute, 31 more than ever received the diploma in one year. I want to congratulate you on having received this degree, and I want to assure you and the older members of the alumni that this is the same old degree: it is the same kind of degree that you received. The reason that there are 31 more this year is not because the Faculty have been any more merciful or any more inclined to regard human weaknesses and frailties. They have got that degree because they have earned it, and they have done absolutely all the work required of them. [Applause.] This means something. There has been no change of policy up to this time. I welcome you to the band of the alumni,—the alumni who really have made the reputation of the Institute, and on whom we rely to sustain it.

I have been asked to speak for the Faculty. I am sorry that they have so poor a spokesman, but I am glad of the opportunity of speaking. If I can say a few words, and if in those few words I can concentrate the feeling that has been pent up for the last six years, then I am content. I am not an alumnus. I haven't had an opportunity to express even an overheated judgment or a vociferous opinion,—I am a member of the Faculty. [Laughter.] I know why I am here, why I am asked to speak. You want to know what the Faculty thinks on this question,—the most burning question to us all. [Cries of, "We do, we do! You are right!"] How can I speak to you and tell you what the Faculty thinks on this proposition? The Faculty has not considered this proposition. We understand that there has been no *definite* proposition for them to consider. But the Faculty have been thinking about this. You cannot doubt that they have been thinking about it for the last six years. It is the vital thing to them. The Faculty are not waiting for a definite proposition to begin to think. It isn't the definite proposition in which they are interested. It is the general proposition. [Applause.] They are not interested in the coating that must be given to this pill to make it more acceptable to the alumni and to the Boston public. What they are thinking about is whether they need any dose at all. ["Good, good!" and applause.]

I have said "we." I haven't a right to say "we." I must ask you to

take everything that I say to-night as my personal opinion. I have no right whatever to speak of the opinion of the Faculty as a body. Yet I have been associated with this Faculty for twenty-two years, and possibly my ideas are somewhat impregnated with their ideas and their prejudices. I tried to think, when you asked me to speak for the Faculty, what I could do to tell you more than my own individual opinion on this subject. There are 67 members of the Faculty. I took up a catalogue, and, as I looked over these names, I was astonished to find that from time to time 40 members had spoken to me upon this subject. Two of these men had expressed the idea that it would be well to investigate it. The others thought that it was not necessary or desirable to have any discussion with Harvard on this subject. ["Hear, hear!" and applause.] There were in this number several men who were graduates of Harvard. These men were more definite in their ideas that it would not be wise to enter into any arrangement with Harvard University than the graduates from Technology. [Applause.] I say this simply to show that these ideas were not founded on prejudice against Harvard, against Harvard professors, or against Harvard ideas. These men had a love for their Alma Mater—for Harvard—equal to that of any college graduate for his own institution. But they did not think it was wise to in any way mingle these two institutions. I did not canvass the Faculty. I haven't asked the other members of the Faculty what they think on this subject. I simply looked down the list, and found that 40 had talked with me. Two thought it best to urge some of the Corporation to take some action that would lead to a discussion with Harvard or the Harvard Corporation as to what it was best to do, what could be done. These two men were the only ones that thought it desirable or proper that the question should be discussed. One of these was lukewarm, and the other was in earnest. One of the most distinguished of our professors, one in whose judgment in general I have great confidence, felt sincerely that it was for the interest of the Institute to have a discussion on this question, to have the Corporation consider the question. He thought it was desirable that some arrangement should be made, and he alone stood up for that firmly. I cannot tell what the other members of the Faculty think. I must also say that a number of these members of the Faculty talked with me on this subject before the details of the McKay bequest were known. The McKay bequest makes some very particular statements in regard to the compensation of teachers. Well, the professor is a peculiar man on financial questions. He is always grumbling about his salary. There are men in the Institute of Technology who feel they have

not been adequately compensated for their teaching, who really feel that they ought to have higher salaries. But, if an educational emergency arises, a professor makes the financial sacrifice with enthusiasm. If the integrity and independence of the educational institution with which he is associated is threatened, he teaches sometimes without a salary as long as he can. [Applause.] Witness Johns Hopkins, of Baltimore. Those men worked without a salary, practically, rather than have Johns Hopkins lose its integrity and identity. [Applause.] The professor, I say, is a peculiar man on financial questions. He is willing to sacrifice on all occasions when his convictions are concerned. But let the suggestion come that he is to have an increase and an advancement against his convictions, and you have made the harmless professor a dangerous animal. It is on this account that I think that, although many of these professors talked to me of this matter before the details of the McKay bequest became known,—and you know how liberally he specifies that teachers shall be compensated,—I do not believe that the opinions of any of these men have changed. [Applause.]

That is simply to try to give you as much as I can of what the Faculty thinks. Take it all as coming from me alone. Now you want to know, of course, what the reasons are. I have the greatest respect for this sentiment of loyalty which President Pritchett has done more to build up for the Institute of Technology than any one else. [Applause.] This spirit of loyalty which prompts you to rise at once to defend the Institute,—this sentiment I respect. I am thankful that the engineering scholar has as much sentiment as the classical scholar. It would seem from the last few days that he has more.

The first reason which appeals to me is that it is not wise to increase in size. All these questions which are purely educational ones are capable of being decided by each man, honestly and sincerely, in different ways. I simply believe that as good an education cannot be given to 2,000 in one institution as to 1,000. I am as sincere in that, I think, as our President is that it is not so. We have a right to differ, and I respect anybody who differs from me. I believe the President is as sincere in thinking that it is right to do this as I know I am sincere in thinking that it is not right. [Applause.] I feel sure that in trying to teach that larger number there is much waste force, there is much in the machinery of administration which is unnecessary. I have felt in my small experience here that with the increased numbers in the classes with which I had to deal, even though we had increased instruction, we were not giving the men as

good instruction as we did in the old days. And we try harder and work harder ourselves in teaching, but we do not reach the same result. We have got to the maximum, to my mind, in numbers for the Institute of Technology. But I don't believe, necessarily, that we are ready to limit it to an exact number. I am in hopes that there will be a competing institution that will allow us to keep somewhere near our present level. [Applause.]

My second reason is that in all this new education no one is quite sure what is the right path. We are all trying experiments. We had to start out ourselves with a new idea. We haven't yet worked out that idea far enough to abandon one bit of the impulse with which we started,—to abandon anything of the idea with which Rogers founded us. We haven't reached our maximum point for great changes. If there are to be radical new experiments tried in this engineering education, I think the best place to try them just now is in the new McKay institution. But let us try a little while longer on the lines on which we have begun. [Applause.]

Third, I welcome competition. [Applause.] I think competition is just what we want. The Institute of Technology needs competition to keep it up to its best mark. We are getting a little conceited in our methods. We ought to have a first-class institution to keep us up to our best work, and have that institution near enough so that we would know what it is doing. [Applause.] If under that competition the institution goes to the wall, it had better go to the wall. Take the best view you can, if under that competition she goes to the wall, I would rather she should go to the wall in that way than to be absorbed in the other. [Applause.] The Institute of Technology is an undergraduate college. That is what it started to be, and that is what it is primarily. Why let us talk just now of the advanced graduate work as being of more importance? The undergraduate work is our main work. We must realize that. I do not think it wise that we should begin now to branch off too suddenly into graduate work or into research work. I think those things can only come as a slow, healthy growth, just as they are beginning to come. We don't want to try the experiment at once of having an organization which takes on one side of the river the undergraduate and on the other side of the river the graduate. Nor do we want to have all the engineering work on one side of the river and the research work on the other. We are not ready for that. Let it come gradually, and it will come in the best way.

The last reason, which is really something that I personally feel, perhaps,

more than the other reasons just now on account of the office that I fill, relates to the social side of the student's life. It may seem strange to you for men to take the stand that the Institute life to-day is better than it would be if it were more closely united with the university life on the other side of the river. [Applause.] But I do take that view, and I take it especially since within the last four years, under the encouragement and guidance of President Pritchett, there has developed so much truly democratic spirit among our undergraduates. [Applause.] I do not believe there is a better, more general, democratic life—social life—among the undergraduates of any other institution. There is less of clique here. A man stands on his merits. There is less of the gathering together of the wealthy class in one place. That is a thing which we are free from. We don't have much social life here, but what we do have is of a thoroughly democratic nature. Now the student who goes into the college and the university as a scientific student does not always feel this. Ask some of the Lawrence Scientific men, some of the Sheffield Scientific School men. Do they feel as though they were thoroughly a part of Harvard life or Yale life? Well, some of them, perhaps, do,—the athletes may. But really those men do not feel exactly as though they were received on the same level. There is an old-fashioned prejudice yet against the man who has to work, who has to earn his living by the work of his hands, even if it is in engineering. We haven't got through with that yet in the classical colleges. It is better here at the Institute, where every man feels a respect for his work and never has to run against any false prejudice. He feels that he is the whole thing here at the Institute of Technology. Every man feels that he is just as good as the others. This is a thing hard to describe, but it is real: I know it is there. I have had enough experience with the teachers and students at Harvard to know something of that feeling which keeps the Lawrence Scientific School men away from many of the Harvard gatherings. If we join in any way with Harvard University, we lose a little of that feeling which I like every one of the undergraduates to have,—that he is a part of a big thing, that he belongs to a great institution.

President Eliot has told us that his idea is that our relation should be something like that of Radcliffe. [Laughter.] This simply means a sort of annex. You'd feel that you were one in the annex. You can't help it. I have told you these things in a stumbling way just because I thought you ought to know them, and because the President has told you that he wants to get your opinion. I wanted you to know how the Faculty thought as well as I could tell you. I know the Corporation want to know how

you feel. They want to have the alumni in the closest union with their efforts. The Corporation—I want to say that I appreciate what the Corporation has done for the Institute: it may not be a financial crisis in which we find ourselves now, but there have been financial crises, and these men have put their hands in their pockets and pledged their credit to keep the Institute alive. [Applause.] I know that. Why do we professors feel sometimes that we are willing to stay on small salaries at the Institute when we can get, or some of us can, bigger salaries somewhere else? It is because, when we ask for equipment, we can always get it. When we ask for apparatus, we can always get it. That is something that cannot be said of other colleges. They always appreciate our needs, and have given until our laboratories are unrivalled. I say this to you because the Corporation are going to ask your opinion on this subject; and if it helps you at all to know that there are men on the Faculty who have been thinking about this in their humble way, basing their thinking on their experience, why, I am glad that you can have it. I know the Corporation wants your opinion and wants the opinion of the Faculty; but I believe it wants your opinion more than it wants the opinion of the Faculty. They can get a new Faculty, but they have got to keep the same old alumni. [Applause. A voice, "Three times three for the independence of the Institute of Technology." Three cheers were given.]

THE CHAIRMAN.—The Institute of Technology sends missionaries into all parts of the country, and there these missionaries settle and found colonies. One of the most flourishing of these colonies is the North-western Association. [Applause.] I have the pleasure of introducing the ex-president of the association, Mr. Isaac W. Litchfield. [Applause and three cheers for Mr. Litchfield.]

MR. LITCHFIELD.—Mr. Chairman and gentlemen, I wish I had a megaphone. [Laughter.] As long ago as we can read in the writings of the Greeks and Romans, in the chronicles of chivalry, down to the history of Gettysburg, Manila, and Santiago, so long as men having a consanguinity of purpose have struggled and fought that it might prevail, there has been a tie of respect and admiration and comradeship among brave men. And so, with the noise of battle still ringing in the air, some with the scars of conflict fresh upon us, have assembled here to-night, under the cardinal and gray badge of courage, the scientific men of New England and the country. He who for a noble purpose dares to assail the Majuba Hill of Copley Square is a hero, a brother, for whom an apotheosis by the chef of the Somerset is but a feeble recognition. [Laughter.]

From out of the West has come to this reunion a delegation representing the grand army of graduates known as the North-western Association of the Alumni of the Massachusetts Institute of Technology, unequalled for loyalty or enthusiasm by any body of alumni here or elsewhere. [Applause.] Its monthly meetings are larger than most annual reunions of the alumni of other educational institutions held in the city of Chicago. Its members, no doubt with the prestige such as only the Institute of Technology can give, are sought for and take places of high honor and influence; and out of gratitude for that educational birthright the best we can give to Old Tech in return shall be a grateful duty. [Applause.]

Although not now a resident of Chicago, it is my privilege to represent the North-western Association in the position of class secretary; and I want the men of the East to realize the tremendous influence that is being exerted, and the still greater influence that can and will be exerted, by the strong Tech spirit of the West. It is difficult for you here in Boston to understand the wonderful work the Institute has wrought in that far-off country, where the great arteries of trade flow with coal and ore and lumber, and where a million is the greatest common divisor rather than the least common multiple. [Applause.] The time was in the West when the Tech man was a Roundhead among the gay collegiate Cavaliers, but to-day he has demonstrated before all the world that the stone which the builders rejected, the same has become the head of the corner. [Applause.] The North-western Association comes to you to-night strong and aggressive for Alma Mater, to offer its loyal best. Gentlemen, I propose "The Men of the North-western Association,—we know them, and we like them." [Applause and cheers.]

THE CHAIRMAN.—Gentlemen, it is necessary in the national capital to have some one to look after our interests. Those interests are taken care of by the Washington Society of the Massachusetts Institute of Technology. I take pleasure in introducing Mr. Proctor L. Dougherty, '97, representing the society. [Applause.]

MR. DOUGHERTY.—Mr. Toastmaster, Members of the Alumni,—as the hour is late, I will content myself with simply a few words. It is my privilege to-night to represent here and to bring greetings from over 100 Institute graduates in the city of Washington, known as the Washington Society of the Massachusetts Institute of Technology,—a small but energetic association, having a very long name. Except for the presence of a few to-night, the bulk of the members of our organization are constrained by circumstances beyond their control—many of them are no longer single—

to remain away from the festivities of this week. Perhaps for a truer reason they are absent; for, were they to leave their posts of duty in the national capital, the wheels of the government would certainly turn more slowly, if not cease to turn entirely. [Applause.] The members of our organization include, not only the resident graduates in the city of Washington, but extend as far southward as the city of Norfolk, Va., and northward to include the city of Baltimore; and they to-night send you this message:—

They like to think, they like to look into the future, into the years to come, and to picture their beloved Institute of Technology become the greater Technology, with its new site, its new buildings, a memorial gymnasium, a campus and a field for sports, with its new surroundings, adhering to the old principles so well laid down by Rogers. They like to think of this greater Institute as without a peer in this country, and one of which the Commonwealth of Massachusetts, as well as the alumni of the Institute of Technology, may well be proud. [Applause.]

THE CHAIRMAN.—And now, gentlemen, for the last speaker of the evening we have kept one who needs no introduction to the Tech alumni, the President of the Technology Club. [Applause.] Gentlemen, Mr. Munroe. [Renewed applause and cheers.]

MR. MUNROE.—Mr. President and fellow-alumni, I left my voice at the Pops, but your kindness to me to-night and last night on Rogers steps has put my heart where my voice used to be. [Applause.] I know of no greater honor that could come to a man than to have the esteem, as perhaps I may flatter myself that I have it, of such a body of men as this gathered here to-night. [Applause.] And I know that this esteem comes to me for no qualities of my own, but because I have had opportunity to show, in one way and another, some devotion to this great Massachusetts Institute of Technology. [Applause.] And the reason, gentlemen, that I have shown this devotion is because I was brought up in an atmosphere of devotion, in the unique Tech atmosphere which has created the greatest technological school in the United States. [Applause.]

If you will pardon me for being personal, I will tell you that I lived as a sub-Freshman in the house of John Cummings, who dived deep into his pocket to save the Institute of Technology from absorption by another institution. [Great applause.] I entered the Institute of Technology in '78, when they had not funds to pay their current bills, and when the Faculty of the Institute themselves reduced their salaries to pay those bills. [Applause.] I saw at that time President Rogers, then an old man, and

a man broken with years of sickness,—I saw him come back and take the helm which Runkle, worn out with the struggle, had had to drop. I saw him take that helm again, and a few years later, when I graduated in '82, on my graduation day I saw that splendid old form fall dead on the platform, killed by his devotion to the Institute. [Applause.] And for seven years I had the honor and the privilege of being the Secretary of this great institution; and I had the even greater privilege, perhaps, to live daily—I might say almost hourly—in the presence and under the inspiration of Francis Walker. [Applause.]

Francis Walker was a man of the most violent temper, kept down by the most iron will, of any man that I have ever known; and the only times that I have ever seen that temper get the better of that iron will were when any one suggested that there should be any pause or any change in the magnificent development of the Massachusetts Institute of Technology. [Great applause.] Most of you, or many of you, remember that scene—one of the most impressive that we ever saw—when the coffin of General Walker was borne (on the shoulders of the splendid young men that he loved) up the aisle of Trinity Church, where not only we Institute men, but representatives of the whole city of Boston, were kneeling and weeping because their greatest citizen had gone. And he had gone because he had worn himself out in building up, from those early days of abject poverty, the Institute of Technology, so that he left it comparatively rich in money, infinitely rich in reputation, and, as I have said, left it the greatest technological institute in this world. [Applause.]

Now what made all these men, what made this Faculty, whom I have had the honor of knowing for years and years,—what made them work overtime and double time and treble time, throwing their whole lives into the Institute of Technology? What has made them do this? It has been this unique thing, this Tech spirit, this devotion to the splendid ideal which President Rogers foresaw, and which we and our successors will some day realize. [Applause.] Of that great Tech spirit, of that splendid ideal of development, of growth, of independence, we Institute men are the legal, the moral, the sole trustees. And if we alienate it or diminish it or lose our courage in the matter of that trust, if we do not hand that trust on to our successors as it was given to us by those great men to whom I have referred,—if we do not hand on that trust undiminished, untarnished, then I say we are traitors to those men and to the Institute. [Tremendous applause and cheers.]

THE CHAIRMAN.—Gentlemen, three long cheers for the Institute and good-night.

CLASS DINNERS, SPREADS, ETC.

During the reunion every one of the classes ever graduated from the Institute held informal spreads in the Back Bay hotels, and met at class dinners. Classes having a small number of members joined forces in their dinners. Five classes held their dinners on Monday, while the rest of the dinners and the spreads were held on Tuesday. (For reports of these see "News from the Classes").

The following societies and fraternities held open house and gave spreads to the alumni :—

The Technology Club, Sigma Chi, Theta Xi, Number Six Club, Phi Beta Epsilon, Delta Upsilon, Sigma Alpha Epsilon, Phi Gamma Delta, Delta Tau Delta, Phi Kappa Sigma, and the K₂S.

The visitors were additionally entertained by many unscheduled excursions, such as tally-ho rides to the Country Club, automobile rides through the Metropolitan Park Reservations, and a tour of Boston and vicinity on observation trolley cars.

Tuesday afternoon it was a pleasure for many graduates who were not familiar with the new buildings of the Institute, to visit the various departments, where they were greeted by members of the Faculty and Instructing Staff, and invited to inspect the various laboratories and lecture-rooms.

RECEPTION BY MRS. MIXTER

Ladies visiting the reunion were tendered a reception by Mrs. Samuel J. Mixter at her home, 180 Marlborough Street, Wednesday evening, June 8, from eight to ten o'clock.

FREDERIC FIELD BULLARD, '87

As the REVIEW is in press comes the sad news of the death of Frederic Field Bullard, '87, on June 24. Though in wretched health, he gave himself day and night to the work of preparing for the musical part of the Reunion, and his exertions, especially on the night of the concert at Symphony Hall, did much to wear him out. In his untimely death the Institute loses one of her most loyal sons and America loses one of the most brilliant of her younger composers.

At a meeting of former students of the Massachusetts Institute of Technology held at the Technology Club June 27, 1904, the following memorial was presented:—

When Frederic Bullard ('87) passed from us last Saturday, the Institute lost a devoted son, whose untiring efforts in a field which was peculiarly his own have done more for Technology than we can ever know.

As Institute men we are particularly indebted to him for creating the Tech Song Book, which involved a large amount of work that was unrequited, save in the pleasure it gave him to serve the institution which he loved so well. A great many of the compositions, including the celebrated Stein Song, were his own; and at the time of his death he was engaged in revising the book, a labor of love in which he was intensely interested.

Very few of us who knew Mr. Bullard fully realized the extent of his devotion to Alma Mater, which found its most ardent expression in his inspiring influence on the undergraduates. It was his custom every Saturday evening to meet them at the Tech Union, and drill them in the songs which he had composed or arranged for them. His enthusiasm and good comradeship carried him straight to their hearts. Often of late struggling against a feeling of exhaustion due to overwork, he met the undergraduates with a cheery welcome, and became the centre of the happy throng without a sign of the pain he was enduring. This body of men will miss their friend acutely, but the inspiration of his example has created a spirit of enthusiasm among them which will live long after him.

On the occasion of the recent Reunion, Mr. Bullard entered into the

work of preparation with his whole soul. Although under the doctor's orders, he prepared the orchestration of Tech music for the Pop concert, a laborious undertaking entirely beyond his strength.

On that memorable evening, less than three weeks before his death, he led the Symphony Orchestra, and on the next day took charge of the musical program for the excursion; and then, when the echoes of his songs had hardly died away, his overtaxed resources failed, "life slipped its tether," and his "sunlight of good cheer" was gone from us forever.

GILES TAINTOR, '87.

FRANCIS H. WILLIAMS, '73.

ROBERT H. RICHARDS, '68.

THE PROPOSED COMBINATION WITH HARVARD UNIVERSITY

The REVIEW presents, as a matter of permanent record, some of the documents sent out during April and May by the Association of Class Secretaries of the Massachusetts Institute of Technology and by others. These documents are self-explanatory, and are printed in the order in which they were received.

ACTION OF THE ASSOCIATION OF CLASS SECRETARIES

At a meeting of the Association of Class Secretaries on April 26, 1904, held for the purpose of hearing the reports of committees on the Tech Reunion, the subject of the proposed affiliation of the Institute with Harvard University was brought up by the secretary of the association. He stated that since the call for the meeting had been issued it had been learned that the authorities of the Institute were about to be asked to take such action as might lead to some form of combination with Harvard. The matter of the union of the two institutions had been carefully discussed at length by the association at its previous meeting in February, when a resolution favoring the absolute independence of the Institute was passed unanimously, and was transmitted to the President of the Institute. In order to continue the policy already initiated by the association, by bringing the matter to the attention of Institute men generally, the following vote was passed unanimously by the meeting of April 26:—

Voted, That there be appointed by the chair a committee consisting of the chairman and seven others, said committee to have full

powers to take such action as it deems necessary toward securing for presentation to the President and Corporation expression of opinion of the alumni in the matter of the relations of the Institute with Harvard University.

The Committee of the Association of Class Secretaries sent out the following circular and postal-card petition to between 3,700 and 3,800 graduates and former students:—

BOSTON, MASS., April 27, 1904.

Dear Sir,— There is evidence of a renewed and determined effort to secure closer relations between the Institute and Harvard University. Believing that this will lead to the sacrifice of the independence of the Institute, which would be disastrous to it and contrary to the public interest, the undersigned, a committee of the Association of Class Secretaries, invite their fellow-alumni to join them in signing the accompanying petition for immediate presentation to the President and Corporation.

Announcement will be made of such further steps as may be taken by the Association or its representatives.

Very truly yours,

W. B. SNOW, '82, *Chairman,*

C. T. MAIN, '76,

R. A. HALE, '77,

E. C. MILLER, '79,

I. W. LITCHFIELD, '85,

E. G. THOMAS, '87,

J. A. COLLINS, JR., '97,

F. H. FAY, '93, *Secretary,*

*Committee of the Association
of Class Secretaries.*

PETITION

We, the undersigned, alumni of the Massachusetts Institute of Technology, respectfully petition the Corporation to entertain no proposition to unite, ally, or associate itself in any way, financial or otherwise, with any other educational body.

Signature *Class of.....*

REPORT OF THE ASSOCIATION OF CLASS SECRETARIES

[ADDRESSED TO ALL THOSE TO WHOM THE PRECEDING CIRCULAR AND PETITION HAD BEEN SENT]

BOSTON, MASS., May 12, 1904.

Dear Sir,—In the circular of April 27, 1904, inviting the alumni to sign a petition to the Corporation, it was stated that “announcement will be made of such further steps as may be taken by the Association or its representatives.” In the fulfilment of that promise the following facts are presented: —

At a meeting of the Association of Class Secretaries, held Feb. 18, 1904, the following vote was passed unanimously, after full discussion, by the thirty-five representatives present, and was transmitted directly to the President of the Institute: —

Resolved, That it is the sense of the members present that they are opposed to any plan of union with any other institution which might in any way impair the absolute independence of the Massachusetts Institute of Technology.

The undersigned committee, appointed at a meeting of the Association of Class Secretaries on April 26, 1904, to secure an expression from the alumni in the matter of rumored plans for a combination between the Institute and Harvard University, was guided in its action by the above vote of the association.

The petition sent out to the alumni, April 27, for signature, was as follows: —

We, the undersigned alumni of the Massachusetts Institute of Technology, respectfully petition the Corporation to entertain no proposition to unite, ally, or associate itself in any way, financial or otherwise, with any other educational body.

It was the hope of the committee that an immediate and earnest expression of alumni belief in the independence of the Institute would aid the authorities of the Institute, if aid were needful, in insisting upon the maintenance of that independence. While there might be difference of opinion as to whether any plan to be

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presented would involve sacrifice of independence, we considered absolute independence so paramount in importance to all other considerations that it should on no account be imperilled.

The replies received to the petition were transmitted by this committee to the Corporation with the following letter:—

BOSTON, MASS., May 3, 1904.

Dr. FRANCIS H. WILLIAMS, Secretary of the Corporation of the Massachusetts Institute of Technology:

Dear Sir,—The persistent agitation in the public press concerning a possible union of the Massachusetts Institute of Technology with Harvard University is, in the opinion of the Association of Class Secretaries, prejudicial to the interests of the Institute. The subject of union has been widely discussed by the alumni throughout the country, and has led to the passage of the resolutions which are enclosed herewith.

This association has been informed that the Corporation will be asked to consider this matter and take some preliminary action upon it at its next meeting. In order to obtain a general expression of opinion by the alumni in advance of the meeting of the Corporation, the accompanying notice and the following petition were sent out between April 27 and April 30, inclusive.

(Here followed the petition, given above. The circular of April 27, 1904, and resolutions passed by the Association of Class Secretaries, the Tech Society of Western New York, and the Washington Society of the Massachusetts Institute of Technology, accompanied this letter.)

The replies received before noon of Wednesday, May 4, are set before you. An attempt has been made to group them in the accompanying table.

Respectfully submitted,

(Signed by the Committee.)

A summary of the table presented to the Corporation is here given:—

Those who sign the petition

(a) Without qualification	1,529
(b) With slight but unimportant modification	28 1,557 (95%)
	—

Those who advocate the independence of the Institute, but decline to sign because		
(a) They rely on the judgment of the Corporation,	18	
(b) They consider petition too sweeping	29	47 (3%)
Those who believe some combination of effort may be possible		25 ($1\frac{1}{2}\%$)
Those who believe a union of the Institute and Harvard University desirable		8 ($\frac{1}{2}\%$)
Total		1,637

The whole number of replies received up to the date of this circular (May 12, 1904) is more than 2,000, and they are still coming in. The percentages for the whole number remain substantially as given in the above table.

In connection with this matter we call attention to the accompanying statement, prepared at the request of the committee, of earlier negotiations and the present financial outlook. We refrain from any extended discussion of questions of "competition" or "duplication," deeming them essentially insignificant in comparison with independence.

Very truly yours,

W. B. SNOW, '82, *Chairman*,

C. T. MAIN, '76,

R. A. HALE, '77,

E. C. MILLER, '79,

I. W. LITCHFIELD, '85,

E. G. THOMAS, '87,

J. A. COLLINS, JR., '97,

F. H. FAY, '93, *Secretary*,

*Committee of the Association
of Class Secretaries.*

STATEMENT OF EARLIER NEGOTIATIONS AND PRESENT FINANCIAL OUTLOOK

At least three attempts have been made by Harvard to connect the Institute with that University. The first was in January, 1870, three months after the inauguration of Professor Eliot as President of Harvard. President Rogers was at that time much out of health, and was spending the winter in Philadelphia. A plan for union was carried to the point where it needed only the sanction of President Rogers of the Institute. President Eliot went to Philadelphia to lay the matter before President Rogers. The following extract from the note-book of Dr. Rogers gives the result of the interview:—

Extract from Note-book of Professor Rogers, Monday, Feb. 14, 1870.

Visit from Charles Eliot from $11\frac{1}{2}$ to $12\frac{3}{4}$. He made a full statement of the plan as far as formed. Mentioned that Messrs. Lowell, Thayer, Bowditch, and Judge Bigelow favored the annexation, and thought it would be a *noble* thing for me to agree to it. I replied that I would be purely and wholly guided in anything I did or agreed to by what I regarded as the interest of the Institute and public. That I could not see any advantage to the Institute from the proposed change but the gain of some funds, but that the Institute would be a *great loser* by relinquishing its present independence, and that this would be the real result, however veiled in the plan. . . . He again spoke of the wish to name our school for the Rogers family. I expressed my repugnance to all such names.

Extract from "Life and Letters of William Barton Rogers," Volume II., page 293

Mr. Rogers to Acting President Runkle:—

PHILADELPHIA, Feb. 1, 1870.

Dear Runkle,—Leaving out of view the serious if not insuperable difficulty in the way of changing the application of funds into a channel not originally designed and toward which it is certain much of our early endowment would never have been allowed to flow, I can see nothing but injury to the Institute from the projected change. The Institute has already taken the first place among the scientific schools of the United States, and, if untrammelled, will evidently continue to grow in reputation

and numbers. Those who know our history know that this success is due to the opportunity we have had under the inspiration of modern ideas. No kind of co-operation can be admitted by the Institute which trenches in the least degree upon its independence. What is alone desirable is a friendly working of the two institutions in their respective spheres.

President Rogers's health continued so uncertain that he felt obliged to resign the Presidency in May, 1870. In the following fall, negotiations were renewed, but failed through the determined opposition of Dr. Runkle, who had been elected Professor Rogers's successor in the presidency.

As a result of the financial panic of 1873, the Institute, after 1875, fell off in numbers and in gifts until, in 1878, the number of students had decreased to 188 and there was not enough money in the treasury to pay current expenses. Overtures were again informally made for a renewal of the negotiations rejected by the Institute in 1870.

Notwithstanding the truly desperate situation of its affairs, the Faculty accepted a reduction in their already meagre salaries, the Treasurer, John Cummings, pledged his personal credit for large sums, and Professor Rogers again accepted the Presidency (Professor Runkle's health having given way under the long strain) rather than surrender the independence of the Institute. From that time on the affairs of the Institute improved, and under the Presidency of Walker (1881 to 1897) the Institute advanced in reputation, in numbers, and in resources with extraordinary rapidity. General Walker's opposition to any form of union with Harvard was so well known that, so far as is recorded, no suggestion of a renewal of negotiations was made during his Presidency.

Almost immediately after the death of President Walker, negotiations for a union between Harvard and the Institute were renewed, and have been considered and discussed more or less actively since that time. Formal negotiations failed in 1898 indirectly through the opposition of the alumni and directly, according to statements made at the time, because of the insistence of those in authority at Harvard that in the final agreement there should

be inserted a clause to the effect that this plan was to lead to ultimate union of the Institute of Technology with Harvard University. At that time Mr. McKay was living, but the fact that he was expected to leave large sums to Harvard was used as a chief argument in favor of union.

Since then Mr. McKay has died, and his will was probated in November, 1903. The following is copied from an authorized statement in the Boston *Transcript* of Nov. 10, 1903: "The idea that Harvard is to get \$1,000,000 at once, as given by some newspapers, is entirely erroneous. The will is very plain and specific. After the annuities have been paid, 80 per cent. of the balance of the net income is to be invested (20 per cent. of this balance being reserved to safeguard the annuities), and, when the income from this 80 per cent. of net income has reached \$1,000,000, this \$1,000,000 is to be turned over to Harvard, to constitute the nucleus of the Gordon McKay endowment. Thereafter 80 per cent. of the net income is to be paid to Harvard annually. When the last annuitant dies, the trusteeship ends, and the whole estate goes to Harvard to complete the Gordon McKay Endowment Fund. This will, however, be many years hence, as some of the annuitants are quite young. The trustees think that in from six to ten years* the initial \$1,000,000 for Harvard will have accumulated." It is thought that the amount of property of which the income will be available at the end of this period for the school of applied science at Harvard University will amount to about \$4,000,000, and upon the death of the last annuitant the endowment may reach a larger sum.

The idea that a union should be effected between Harvard and Technology to prevent waste from duplication is based on a mistaken analogy with business enterprises. As a matter of fact, the buildings, laboratories, equipment, and teaching force of a technological school bear almost a direct proportion to the number of students to be accommodated. Very few institutions of learning in this country pay such high salaries to their instructing

*The earliest estimate of this time is four years.

staffs as does the Institute. During the past year, 1902-03, with between 1,500 and 1,600 students, the salaries paid for instruction amounted to \$243,920.91.

The Institute of Technology has never before been in such good financial condition, and her future prospects were never so bright. Since 1862 she has received from private benefactions amounts ranging, for any one year, from \$100 to \$975,000. Exclusive of the square on Boylston Street, the Institute now owns property valued at a little more than \$3,600,000. The income of the school last year was \$436,808.45; and, while \$36,432.14 were spent in excess of income, this was more than offset by the \$50,000 received in the same year for general purposes and the \$51,000, in addition, for special purposes. About \$15,000 of the money spent in excess of income was due to the high price of coal. The courageous policy of the Institute in always meeting the needs of her students and the demands of modern education, whether or not she had money in the treasury, has always been justified and will, it is believed, continue to be justified. If Technology maintains her independence, she may rely with confidence upon the appreciative generosity of the public in the future as in the past. There is credible information, for example, that several wills are made in favor of the Institute, the amounts aggregating more than two and one-half million dollars.

CIRCULAR LETTER FROM SIX MEMBERS OF THE CORPORATION

BOSTON, May 14, 1904.

To the Alumni and Former Students, Massachusetts Institute of Technology:

A misunderstanding exists concerning the recent vote passed by the Corporation. We wish to state that we, the undersigned, members of the Corporation, who requested this action, are opposed to any plan looking toward the absorption of the Institute by Harvard University. The vote passed by the Corporation is as follows:—

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That the Executive Committee be requested to ascertain whether any arrangement can be made with Harvard University for a combination of effort in technical education such as will substantially preserve the organization, control, traditions, and the name of the Massachusetts Institute of Technology.

As signers of this petition, we feel that a consideration of the question at this time is of vital importance to the Institute of Technology.

First. Because Harvard University has just received a bequest probably exceeding the entire endowment of the Institute of Technology; and the provisions of the trust under which this money is given call for its expenditure for purposes of technical education, which would make it necessary for Harvard University to establish a competing technical school, unless some arrangement for co-operation is entered into.

Second. Because the Institute has been so successful and has developed so rapidly that it has entirely outgrown its present quarters, and some further provision must be made in this respect; and, moreover, the present funds available for payment of professors and instructors are inadequate to allow for their proper compensation.

Third. Because the present unsettled condition of this question affects public opinion as to the future of the Institute, and has prevented bequests and donations; and we therefore believe it should be now definitively settled.

HOWARD A. CARSON, Class of '69.

SAMUEL CABOT, Class of '70.

EBEN S. DRAPER, Class of '78.

A. LAWRENCE ROTCH, Class of '84.

JOHN R. FREEMAN, Class of '76.

CHARLES A. STONE, Class of '88.

PRESS EXTRACTS SENT OUT BY THE ASSOCIATION
OF CLASS SECRETARIES.[From the Boston *Evening Transcript*, May 21, 1904]

DUPLICATION IN TECHNOLOGICAL EDUCATION

It has been authoritatively stated that the question of the proposed combination of effort of Harvard and the Massachusetts Institute of Technology has not yet been referred to the Faculty of the Institute. In the light of this fact it would appear that some of the published statements in regard to waste in education and competing technical schools lose much of their apparent significance. We have no intimate knowledge of the constitutional relations between the Corporation and the Faculty of either institution; but a glance at the Tech Catalogue will make it evident, as would be expected, that the Corporation is composed almost exclusively of men selected for eminence in industry, finance, and engineering. The supply of experts in education being limited, the Corporation has wisely chosen to place the direction of educational questions in the hands of a faculty, which is on that account something more than an association of independent teachers.

If the pending negotiations with Harvard are to have any positive result, this will depend necessarily on the careful and very deliberate study of the educational problems involved by the Faculties of the two institutions. The financial and even the legal questions involved may be relatively simple. But to discuss these alone without reference to the less tangible but more vital conditions essential to the highest success in a comparatively new field of education is to take a partial and superficial view of the whole matter. If only material considerations were involved, should not the combination be extended to include all the higher institutions of learning in the vicinity of Boston? If it is wise for banks to "merge," may it not be equally so for high schools, churches, and hospitals, so many of which would exhibit sufficient deficits?

Without desiring to push the analogy too far, still less to attempt any discussion of the educational issues in detail, we emphasize

the unwisdom of depending on irresponsible opinion in the delicate and difficult questions involved, pending their consideration by the Faculty of the Institute as the only body which has had in this vicinity actual experience in the education of more than fifteen hundred students of Technology.

[From the Boston *Evening Transcript*, May 25, 1904]

TECH-HARVARD MERGER: A PROTEST FROM A CAPABLE GRADUATE OF TECH

PRACTICALLY ALL THE ADVANTAGES IN THE SCHEME ARE ON THE SIDE OF HARVARD.—IT REVERSES THE POLICY OF THE INSTITUTION'S FOUNDER AND OF ITS HEADS SINCE THE BEGINNING.—THE LOSS TO HIGHER EDUCATION INVOLVED.

To the Editor of the Transcript:

On May 4 the Corporation of the Massachusetts Institute of Technology, by a majority vote, passed the following motion:—

That the Executive Committee be requested to ascertain whether any arrangement can be made with Harvard University for a combination of effort in technical education such as will substantially preserve the organization, control, traditions, and the name of the Massachusetts Institute of Technology.

In accordance with this vote, and with subsequent action by Harvard, a conference committee of four gentlemen—two from Harvard and two from the Institute—are considering possible plans of affiliation. Of the two representatives of the Institute of Technology, neither is an alumnus, and one is an official of Harvard University.

It would be idle to speculate upon the particular plan which these four gentlemen will present,—a plan which, it has been promised by the President, will be submitted for the approval of the Faculty and of the alumni of the Institute before action is taken by the Corporation; but it is clear that it must fall under one of two general heads: (1) an agreement by which each institution shall abandon certain of its departments, courses of study, or laboratories,

in favor of the other; or (2) an agreement by which Harvard, as far as she legally can, shall surrender the funds, the equipment, and the name of the Lawrence Scientific School to the Institute of Technology on condition that the latter admits certain Harvard officials to her governing body and becomes, legally, a part of Harvard University.

If the first of these general plans were adopted, the development of higher education would greatly suffer by such a curtailment of the work of the Institute of Technology. For applied science rests so absolutely upon research that an abandonment of any of the fields of research would react disastrously upon the work of the Institute. Moreover, the various technical courses now given there are so intertwined one with another that to lop off any would certainly work injury to all the others.

The second general plan (and only through such a plan can the Institute gain the use of the McKay or other Lawrence Scientific School endowments) cannot but be repugnant to past and present students of the Institute, and cannot fail, if it be carried out, to do irreparable injury to the growth of the Institute and to the development of higher education.

In the first place, to adopt such a plan would be to reverse the unbroken policy of forty years,—a policy laid down by Rogers (than whom no one in the nineteenth century did more for the development of American industries), continued by Runkle (to whose initiative the country owes the introduction of manual training), and strenuously held to by Walker (during the fifteen years of whose administration the number of students and of buildings quadrupled, the courses of study increased by five, the funds augmented, and the reputation of the Institute became worldwide). This policy has been one of absolute independence for the Institute, so that its growth might be unhampered by old traditions, its atmosphere of serious work might be uncontaminated, its progress toward a complete and well-balanced occupation of the wide field of science might be unchecked. That this policy has been a wise one is proved by the fact that the Institute, although in competition for two decades with older or richer schools of ap-

plied science,—which were not, however, independent,—is to-day the leading technological school of the United States.

Secondly, to adopt such a plan would be to reduce one of the most influential of modern institutions of learning to the rank of a mere professional department. For the Institute can take the place of the Lawrence Scientific School and can receive the funds belonging to that school only upon condition of assuming the position which the Lawrence Scientific School now holds as a recognized part of Harvard University. The Institute may be permitted to keep its name, but that name will be regarded by the public as belonging wholly to Harvard University. The Institute may be allowed to keep its organization and the control of its funds and of its policy, but it will be somewhat such a government as is that of Egypt; for, just as the acts of that country are subordinate to the will of the British government, so the “control” which is to remain in the hands of the Institute will be subject always to further control by the President and Fellows of Harvard University. The power of the purse is always the real governing power.

Thirdly, such a plan will deprive past graduates of the Institute of their rights as Institute alumni without admitting them to those of Harvard graduates. To rob nearly three thousand men of that intangible but none the less real thing which men mean when they speak of their Alma Mater is not only to deprive them of an important factor in their professional success, it is to do violence to their sense of justice by thus taking away what was solemnly and seemingly in perpetuity given as the reward of their four years’ work and study.

And, to offset these and other risks and losses, what would be gained?

Harvard University would gain the virtual ownership of the leading American school of technology, and would add to her possessions buildings and other property worth over three and one-half millions (perhaps over five and one-half millions, including the land on Boylston Street), and to her catalogue a great body of earnest students and a teaching staff—provided all were retained—of over two hundred men.

Harvard University would lose—nothing. For her name would

remain, her history of nearly three centuries would remain, the loyalty of her great body of alumni would continue: she would not even part with the McKay endowment and other property of the Lawrence Scientific School; for it would still be used in her service, and would be used to such advantage as without the aid of the Massachusetts Institute of Technology she can hardly hope for.

The Institute of Technology, on the other hand, would gain, some years hence, the income from about four million dollars; she would gain some hundreds of students now in attendance upon the Lawrence Scientific School; and her officers would secure some freedom from the burdens of administering an independent college. But in return for this money, not yet available, the Institute of Technology would lose her most precious possessions.

She would lose her prestige as an independent leader in higher education, a leader looked up to by the whole civilized world.

She would lose her opportunity—the greatest ever given to an educational institution—to carry to full fruition the plan most wisely outlined by President Rogers. The Institute has been so busy taking care of her rapidly increasing students that she has hardly begun to reach out into those fields of higher instruction, of deeper professional training, of research, which lie ready at her hand, and which, if she remain an independent institution, she can begin now more fully to occupy.

She would lose the loyalty of her old alumni, she would gain but a divided allegiance from her coming graduates. For, while her present graduates have for the Institute of Technology a love and enthusiasm as great as that of any Harvard man for his Alma Mater, the graduates of the "Institute of Technology affiliated with Harvard University" would be Harvard alumni first, and Institute alumni not even second; for the real Institute would have disappeared. As to the men of the thirty-six classes already graduated, they would have about the same feeling toward this affiliated Institute which Harvard men would entertain toward that university, were it to become subordinate to Yale.

Finally, from such affiliation as the second general plan involves, the cause of higher education would gain absolutely nothing, and

it would lose much. For to consolidate two educational institutions, each of which is now training young men in a satisfactory way, is to defraud the cause of higher education. The secret of success in education, especially in technical education, is to bring students into the closest possible contact with their teachers, is to give them the freest use of the school's apparatus and equipment.

If the consolidated school, then, is to do as good work as the single schools have separately been performing, their staffs must in no way be diminished, their equipments must in no degree be curtailed. But, if the proposed consolidation is to save money, there will be an attempt to make the teaching staff and equipment of one institution serve the needs of two. This, however, will increase the number of students to each professor, will diminish the share of each student in the whole equipment, and will result in much damage to education in general and to the consolidated schools in particular.

Higher education would suffer, also, through the extinction of the healthful, friendly competition now existing between the Institute of Technology and the Lawrence Scientific School. Indeed, it has been a distinct disadvantage to the Institute that the competition of the Lawrence Scientific School has not in the past been keener. And there could be no greater benefit to higher education, no higher advantage to the Institute itself, than to have the McKay endowment build up on the Cambridge side of the Charles an active and vigorous competitor. Colleges are naturally conservative, they are unwilling to depart from established methods, because of their chronic poverty they are slow to meet the demands of social and industrial life. This is dangerous, especially with colleges of applied science, where discoveries and inventions are continually changing the conditions and needs of the industrial world.

A strong spur to keep such colleges ever on the alert, ready to meet the demands of the time, willing to take risks and to try experiments, is the near presence of a friendly rival, who is sure to profit by mistakes, certain to watch and criticise methods and results, eager to try those new paths and to take up with those new

ideas which will give it an advantage in the educational field. That the Institute must acquire—as it readily can acquire—money approximating in amount that of the McKay bequest is no loss to the community or to education. On the contrary, it will be a distinct gain to both; for the double sum will be returned to the community many-fold through the quickening, broadening, and strengthening of the resulting competitive education. Merely from the industrial standpoint the doubled millions will come back to the State many times over in the increased efficiency of the young men whom those rival endowments train.

General education would suffer, moreover, by such consolidation, through the resulting unwieldiness of the body of students to be educated. No school of applied science can efficiently handle more than a limited number of young men. The Institute, equally with other large colleges, is already hampered in its work of education by excess of numbers. To double its size would to a serious degree dilute its educational efficiency. Sound administration does not admit of two heads to a professional department; yet, if the department increases beyond a certain size, the professor in charge becomes a mere mechanician involved in details of administration, wearied by minutiae, cut off almost completely from that personal contact with his students which is worth more to them than all the books and apparatus in their curriculum.

The only justification for an affiliation of the Institute with Harvard University would be the hopeless poverty of the former institution. But, as is stated in a circular letter recently issued by the Association of Class Secretaries of the Massachusetts Institute of Technology:—

The Institute of Technology has never before been in such good financial condition, and her future prospects were never so bright. Exclusive of the square on Boylston Street, the Institute now owns property valued at a little more than \$3,600,000. The income of the school last year was \$436,808.45; and, while \$36,432.14 were spent in excess of income, this was more than offset by the \$50,000 received in the same year for general purposes, and the \$51,000, in addition, for special purposes. About \$15,000 of the money spent in excess of income was due to the high price of

coal. The courageous policy of the Institute in always meeting the needs of her students and the demands of modern education, whether or not she had money in the treasury, has always been justified, and will, it is believed, continue to be justified. If Technology maintains her independence, she may rely with confidence upon the appreciative generosity of the public in the future as in the past. There is credible information, for example, that several wills are made in favor of the Institute, the amounts aggregating more than two and one-half million dollars.

If the Institute remains true to the course of development which she has pursued for forty years and which has brought her fame, power, and efficiency, she can confidently depend upon her past students and upon the public at large to see that she is no poorer than a good and growing college ought to be. What has so greatly raised the standards of college education in the last twenty-five years? Mainly the example of the Institute of Technology forcing the older institutions to revise their methods, to develop their courses, to equip laboratories, and to give an education more in line with the needs of modern life. And those older institutions, thus modernized, together with the newer colleges of the West, can never injure the educational work of the Institute if she remains true to herself, even should their competition reduce somewhat her numbers. They will merely force her to keep "ahead of the procession" and to do every year better and better work. If, however, the Institute is tempted by the money belonging to another college to sell her great birthright for a few millions of dollars; if she forgets the courage of Rogers, Runkle, Walker, and their associates, who boldly faced great odds and dangers; if she publicly declares that she does not dare to continue the work in higher education which they began,—then she loses the respect of the world, she loses the love and loyalty of her alumni, she loses the greatest opportunity for educational leadership ever given to a college, and she sinks into the ignoble position of a subsidized dependency.

ALUMNUS.

[From the Boston *Evening Transcript*, May 27, 1904]

To the Editor of the Transcript:

In connection with the Technology-Harvard negotiation it has

been reiterated that the Committee of Class Secretaries was over-hasty in its canvass of alumni opinion, that it should have awaited the presentation of a definite plan, relying in the mean time on the judgment of the Corporation. This seems to the writer to be based on an imperfect appreciation of the situation. The Class Secretaries' Association is the only broadly representative body of alumni opinion. Its members became aware that steps had been taken, in such a manner as to seem to represent alumni opinion, to put the Institute in the position of seeking a combination with another institution, which had only six years before insisted on ultimate union as a basis of agreement.

If that action proposed were taken by the Corporation, the difficulty of defending the Institute's absolute independence would be—as it now is—materially enhanced. It was not a question of the details of a future plan, but of whether the alumni should have any voice with the Corporation in its action on the main question; namely, whether "combination of effort in technical education" should be sought if "the organization, traditions, and the name" (*not* the independence, be it noted) of the Institute were to be "preserved" in some refined sense which it was necessary to qualify as "substantially." The average Tech alumnus, as is alleged by a newspaper once more important than now, may not be prominent, he may not even be broad-minded,—a virtue akin to superficiality,—but he is tolerably direct in his mental processes and possibly a little impatient of verbal technicalities. He is not troubled by fine-spun doubts as to the meaning of independence. To his possibly too simple mind the Institute has no right to Harvard funds, and can acquire no right to them except with absolutely proportionate responsibility to the university,—a responsibility incompatible with independence. To men holding these convictions and believing themselves responsible to their fellow-alumni it was an imperative duty to appeal at once to their constituency in unequivocal terms for an expression of opinion on the question of the Institute's independence. The response was exceedingly significant. There was no stampede. To many the idea that independence could be questioned seemed then remote and preposterous, to some the pro-

posed expression of opinion seemed premature, to all it was difficult to act without fuller information. The fact that, nevertheless, not fewer than two thousand—95 per cent. of a remarkably large poll—deemed the principle of independence paramount to any formal scruple was most significant. The writer desires as a graduate to express his appreciation of the courage of the Committee of Class Secretaries in taking this difficult stand, and his hope that their efforts will yet remove any possible doubt as to the outcome. The task confronting the gentlemen who now volunteer to break the force of the demonstration of alumni conviction which the Class Secretaries' Committee has secured is indeed a difficult one.

GRADUATE.

CIRCULAR LETTER FROM 122 PAST STUDENTS

BOSTON, MASS., JUNE 1, 1904.

To the Alumni and Former Students of the Massachusetts Institute of Technology:

The undersigned, alumni or former students of the Massachusetts Institute of Technology or teachers at the school, believing that there is much discussion abroad with reference to a Technology-Harvard affiliation without a sufficient knowledge of the facts, send this letter to the alumni.

The Corporation has appointed a committee to confer with a committee appointed by the Corporation of Harvard University to see if an arrangement can be made for the forming of closer relations between the two institutions.

We believe that the alumni should take no hasty action in regard to this matter, but that they should wait until they have a definite proposition for discussion.

It is the purpose of this letter to ask you to defer your judgment of what is best for the future of Technology until the proposition for an affiliation is presented to us.

Yours very truly,

[SIGNED BY 122 PERSONS.]

CIRCULAR LETTER FROM MR. CARSON.

MERGER OF THE INSTITUTE OF TECHNOLOGY WITH HARVARD
UNIVERSITY

20 BEACON STREET, BOSTON, MASS., June 1, 1904.

Dear Sir,—I have not found time to answer the letters on the above-named subject which have been addressed to me individually, and for this reason and others I desire to say a few words thereon in this note. I have from the first sympathized with some of the ideas of those who have opposed a so-called merger. This sympathy, however, does not at all prevent my willingness to consider an "arrangement" with Harvard which would preserve to the Institution its "name, traditions, organization, and control."* All depends on just what the "arrangement" would be.

For example, there has long been an arrangement between the Institute and another institution of learning by which certain teaching is given to classes of the Boston University by the Institute and paid for by the University. No one, so far as I know, has ever objected to this; and I, for one, would not object to a similar arrangement with Harvard, for much or little technical teaching, even if it should be a part of the bargain that Harvard be officially (as it now is unofficially) represented in the Institute corporation and Executive Committee.

There are many other conceivable plans for an arrangement with Harvard, and I think they should not be sweepingly either assented to or objected to unexamined in advance; but, whenever a specific proposal is made, it should be carefully studied, and should then be aided or opposed according to its merits or demerits.

Yours truly,

HOWARD A. CARSON,
Class of '69.

* Vote of Corporation of the Institute, May 4, 1904.

THE GORDON MCKAY ENDOWMENT

The following were published in the Boston *Herald* of June 27, 1904:—

To the Editor of the Herald:

The main reason advanced by the advocates of a Technology-Harvard alliance seems to be the fear, on the side of Technology, that there will be built from the McKay bequest, on the Cambridge side of Charles River, a technological school of similar character to the Institute, having such vast resources as to be able to attract all the first-class teachers, by the payment of high salaries, and to offer to students the same or greater educational facilities at a lower cost than the Institute can afford, so that the supremacy of the Institute in its particular line of work will be endangered, and its ability to maintain itself as a going institution shaken. An examination of the provisions of the McKay will indicates clearly, however, that a school of the present size of the Institute of Technology cannot be built in two generations of men from the funds which Harvard will receive from the McKay estate,—a very remote contingency for which to sacrifice in the least the absolute independence of the Institute.

It has been understood by many that the sums of money to be paid to Harvard by the trustees of the estate were to be available, immediately on their receipt, for the erection of buildings, the equipment of laboratories, etc., so that the initial payment of \$1,000,000, which will be received in five or ten years from the present date, would provide for the establishing of a great technical school at an early date. This is clearly incorrect, as the will provides definitely that, should Harvard accept the terms of the will, all payments from the trustees of the estate to Harvard College constitute the "Gordon McKay endowment," of which the income only is to be available for the Gordon McKay school.

Thus, instead of \$1,000,000 being immediately available for the expenses of the school, there will be available only \$40,000

(4 per cent. return from investment being assumed) one year after the receipt of the initial payment, and somewhat larger sums in succeeding years, as the endowment grows by additional payments from the trustees. As the value of the property of the Institute now exceeds \$5,000,000, it is plain that no competition based on equal facilities is to be expected from the McKay bequest in fifty years, even should there be no addition to the resources of the Institute in that time, and presuming that no part of the McKay funds is diverted to the Medical School, Observatory, or other scientific schools of Harvard College, a use which the will permits.

The above facts and others of importance are well brought out in the following opinion on the provisions of the McKay will from a prominent Boston lawyer:—

Memorandum of opinion of the McKay will:—

1. How soon will the estate of the late Gordon McKay be available for use for the purposes of a scientific school?

All the estate of every name and nature left by Gordon McKay at his death was bequeathed and devised to trustees, to be held and disposed of by them upon the trusts and for the purposes following:—

(a) To hold and securely invest and reinvest said principal estate.

(b) To care for the McKay burial-place.

(c) To pay certain annuities out of the income of said estate.

(d) To invest from time to time 80 per cent. of the balance of the net annual income of said estate after paying said annuities until such accumulations amount to the sum of \$1,000,000, and then to pay over said sum of \$1,000,000 to the "President and Fellows of Harvard College in their corporate capacity." Said sum of \$1,000,000 is to be held and invested by said President and Fellows as part of the Gordon McKay endowment, and the income from it is to be used to promote applied science. I am informed on good authority that it will be at least five years, and probably not more than ten years, before this sum is paid over to the President and Fellows of Harvard College.

After said sum of \$1,000,000 has been paid over to the said President and Fellows, 80 per cent. of the balance of the net income from the remainder of the Gordon McKay estate, after paying existing annuities, is to be annually paid over by the trustees of the estate to said President and Fellows, who shall hold and invest it as part of the Gordon McKay endowment;

and upon and after the death of the last surviving annuitant all the residue of the estate is to be paid over to said President and Fellows, to be held and invested by them as part of the Gordon McKay endowment.

There were at the date of the printing of the will by the trustees sixteen annuitants, receiving in all \$42,600 per year. One of the annuitants was born in 1886 and one in 1887, while some of the others are children of persons who were living in 1887.

It is pointed out that, when the payments from the income of the estate are made to the President and Fellows, they become part of a principal fund, and that until the death of the last surviving annuitant it is the income from part of the income of the Gordon McKay estate that will be available to promote applied science.

2. For what purposes is the endowment created by the late Gordon McKay to be used?

The net income of said endowment is to be used to promote applied science:—

First, by maintaining professorships, workshops, laboratories, and collections for any or all of those scientific subjects which have or may hereafter have applications useful to man; and,

Second, by aiding meritorious and needy students in pursuing those subjects.

The testator instructs the President and Fellows to take special care that the great subject of mechanical engineering, in all its branches and in the most comprehensive sense, be thoroughly provided for.

All grades of instruction in applied science, from the lowest to the highest, may be provided for from the endowment.

The professors supported from the endowment are to be provided with suitable assistance in their several departments.

These provisions are so broad that, in my opinion, a large part of the income from the endowment may be used by the President and Fellows to promote applied science along many of the lines on which Harvard College is now working, among others along the lines of medicine, biology, and kindred subjects.

3. Who shall hold and invest the endowment, who shall apply the income from the endowment, and who are the beneficiaries under the will? To answer these questions, we must look to the will to find the intent of the testator.

Referring to the will, I note that the sum of \$1,000,000 is to be paid over to "the President and Fellows of Harvard College, in their corporate ca-

pacity," to be held and applied by them and their successors in said capacity, for the purposes and trusts thereafter declared, and that all other sums paid over to said President and Fellows of Harvard College are given to said President and Fellows of Harvard College strictly upon the same trusts and purposes.

I also note that the testator directs that the investments of the endowment shall be merged with the general investments of the other permanent funds held by the President and Fellows.

In making the bequest to "the President and Fellows of Harvard College," it can be assumed that the testator had in mind the powers of the corporation. These powers are, generally speaking, given in its charter and limited by it. Referring to the charter and amendments, I find that the President and Fellows of Harvard College and their successors shall and may purchase and acquire to themselves, or take and receive upon free gift and donation, any lands, tenements, or hereditaments, and any goods and sums of money whatsoever, to the use and behoof of the said President, Fellows, and scholars of the said college, while another clause of the charter includes officers of the college as beneficiaries. The assumption is, therefore, that a bequest to the "President and Fellows of Harvard College" is for the use and behoof of members of Harvard College.

In the will the testator directs that the salaries attached to the professorships maintained from the endowment be kept liberal, that their effect may be to raise, in some judicious measure, the general scale of compensation for the teachers of the university. (From this it appears that the professorships maintained from the endowment are to be professorships in the "university," which is "Harvard College.")

Toward the end of the will I note the following two paragraphs:—

"Should the said President and Fellows of Harvard College fail to accept (in writing) the above endowment upon the terms and provisions above set forth within two years after my death, I then give said accumulations and said residue to my trustees hereunder, and their successors, in trust to apply the same to the purposes above set forth.

"And for this purpose I direct them to select suitable associates and form a corporation in, and under the laws of, and if need be, under a special charter to be obtained from the legislature of the Commonwealth of Massachusetts, to receive, hold, manage, and apply said endowment by means of an establishment at some place within said Commonwealth for the purposes and upon the terms above set forth, in respect to said gift to Harvard College."

From the foregoing it appears that it was the intent of the testator, first that the same corporation should hold, manage, and apply the endowment; and, second, that the endowment was to be a gift to "Harvard College," conditional only upon its acceptance by the President and Fellows of Harvard College upon the terms and conditions named in the will. The President and Fellows of Harvard College, in accepting the endowment, are bound by the provisions of the will to use it for the purposes and upon the terms and conditions set forth in the will; for the acceptance of the endowment makes a contract between the testator and the corporation. As the Constitution of the United States provides that no State shall pass any law impairing the obligation of contracts, any action by the legislature attempting to change the provisions of the will, will be null and void. It is, therefore, my opinion that the principal fund of the endowment is to be held and invested by the "President and Fellows of Harvard College," that the income from said fund is to be applied by "the President and Fellows of Harvard College," and that the beneficiaries of the fund shall be members of "Harvard College."

In view of the above facts it is apparent that the members of the Corporation and others to whom the present agitation is due are unduly frightened at the prospect of competition, which can hardly become appreciable during the incumbency of the Corporation's youngest member; and they must hold very cheaply the favor and co-operation of the Faculty and alumni to alienate their sympathy and aid by consideration of a proposition involving, as the above opinion clearly shows, the independence of the Institute and furnishing so small an addition to its funds as can come in any reasonable time from the McKay endowment. It is certainly a matter for regret that, if the Corporation has found its resources inadequate to provide for the necessary growth of the Institute's plant, it did not first ask the help of its former students, whose loyal support cannot be questioned, while as a matter of business it is surprising that they should prefer to seek the very distant aid which alone the McKay bequest can afford.

Acting on the statements of the Institute's needs received at the recent Reunion, past students all over the country have organized to raise immediately a large endowment, contingent upon the

independence of the Institute; and it is known that, aside from the above fund, bequests of at least \$2,000,000 will be available before many years. The greater part of these bequests, however, will not come to the Institute unless it is assured that there will be no official representation of Harvard College on the governing boards of Technology. With the aid thus afforded it is certain that the Institute can promptly meet the growing demands of its students and maintain readily its present leadership in technical education.

EDWARD G. THOMAS, '87.

BOSTON, June 21, 1904.

(EDITORIAL)

THE GORDON MCKAY BEQUEST

The communication of Mr. Edward G. Thomas, comprising citations from a legal opinion touching the precise conditions of the Gordon McKay bequest to Harvard College, places the matter, so far as it relates to the establishment of any organic relation between Harvard and the Institute of Technology, upon a different basis from that commonly supposed to exist. In the discussions of the subject of constituting some formal relation of intimate alliance or co-operation (for we believe the notion of a merger is repudiated by both parties) it has been assumed that Harvard has acquired an endowment for work in the department of applied science that threatens not only to cause an uneconomic duplication of plant for the same purposes, but to so overshadow the Institute of Technology, by virtue of the superior means of the new institution, as to obscure its rank and repute in the educational world.

By some means it has become a current idea that Harvard is to have very soon from the McKay estate an available fund of several million dollars for the establishment and support of such an institution. The analysis of the provisions of the McKay will that is set forth in the communication referred to indicates that this common opinion is erroneous. The fact appears to be that Harvard will have no such sum available for use in the immediate

future. The Gordon McKay estate is to be held in trust and the income used in the payment of a large number of annuities, some of which, in all probability, will not expire for many years, as the beneficiaries are now infants. It is not until all these annuities have lapsed that the principal of the estate is to come into possession of Harvard, and not then for expenditure, but as an endowment, the income of which may be used for purposes specified.

But it is provided that, whenever in the interim the accumulations of income in excess of the sum required for the payment of the annuities shall amount to \$1,000,000, that sum shall be paid over to the college as an endowment fund, the income of which shall be used to promote education in science, especially in applied science; and, further, that, after the payment of this \$1,000,000, 80 per cent. of the net income shall annually be paid to the college corporation and added to the endowment fund already established, only the income of which is available for expenditure. Ultimately, the endowment will be increased by the whole residue of the estate, as before stated.

It is the opinion of those who should know best that the first instalment of the endowment, \$1,000,000, will not be paid until some time between five and ten years hence. If this shall be invested so as to yield a return of 4 per cent., there will be from it an annual revenue of \$40,000 available for the purposes designated. This sum will gradually increase, of course; but, in the nature of the case, it will be a long time before the bequest will enable Harvard to establish a scientific plant rivalling that already possessed by the Institute of Technology, and it is not unreasonable to presume that much additional good fortune in the way of endowment may accrue to the Institute before that distant day.

The significance of the conditions set forth is that, so far as the financial situation is an element of supposed present urgency in determining the establishment of new relations between the two educational institutions, it really has little force, and gives no reason for precipitate action. Twenty or fifty years hence the

comparative resources of the institutions may be quite different. Certainly, it does not seem that the Institute of Technology is in present peril of having its usefulness dwarfed by the superior efficiency of the McKay millions in building up a rival. The primary error in the matter is that of Mr. McKay himself in not deciding to secure to Technology the primacy it had so bravely established in the work that he desired to aid.

THE TECHNOLOGY FUND

Colonel Livermore, speaking as a representative of the Corporation of the Institute, said at the reunion dinner at the Hotel Somerset:—

The whole origin of the raising of the question to which I have referred [that of the proposed combination of effort with Harvard University] is a financial one. It is the fear that the Institute will not, without taking some action for co-operation, have the necessary financial support. . . . It would take a pledge of not a great sum from each individual of the three thousand alumni to make the Institute feel as independent as it ought to be. It is not money for the benefit of the board of government, or for any individual, but for the Institute, to keep it at the best and to make it in the future the leader of all technical institutions in this country.

Following this pertinent suggestion, certain past students of the Institute, from Boston and from other parts of the country, began on the morning after the reunion to make preparations for the raising of a Technology fund to further the development and to maintain the independence of the Institute. Already a number of meetings have been held, headquarters have been established at the Technology Club, class committees in Boston and local committees in other parts of the country have been or are being organized, and information regarding the proposed fund is being sent to all past students of the Institute whose addresses are known. In addition, lists of persons of wealth believed to be interested in the Institute are being prepared, and a systematic appeal will be

made to them through proper channels at the same time that the canvass of Technology men is going on.

The work is being taken hold of with much enthusiasm, and the classes, collectively and individually, are rallying to the work of securing for the Institute five-year pledges of financial support, which, in their total, will place the school, for some years at least, in a position of comparative financial ease. The reunion indicated clearly the loyalty of her sons to their Alma Mater. It only remains for them to demonstrate that loyalty by tendering financial as well as moral support.

The plan has the cordial indorsement of President Pritchett. Mr. William Endicott, Colonel Thomas L. Livermore, and General Charles J. Paine, all of the Corporation of the Institute, have consented to serve as an advisory committee. Dr. Francis H. Williams, '73, Professor Robert H. Richards, '68, Mr. James P. Munroe, '82, and Professor Francis W. Chandler will act as an executive committee; and actively associated with them are already a number of representative past students of the Institute, acting either as members of class committees in and around Boston or as members of local committees in other large cities and centres of the country. All inquiries should be addressed to the Technology Fund Committee, 83 Newbury Street, Boston (*Telephone, Back Bay 195*). The office is on the third floor of the Technology Club, and some member or representative of the committee will be in attendance every day, excepting Sunday.

The financial condition of the Institute is more pressing than for many years because of the demands made by increasing numbers, by higher professional standards, by calls for graduate work on the part of students and for research work on the part of the instructing staff, and most of all by the increasing competition of those colleges of the Central and Western States which have modelled their work upon that of the Institute. Up to this time the leadership of the Institute has been that of a pioneer. In future it must be that of the "first among equals." Such leadership will require growing resources in order to provide for the Institute the best equipment, the best courses, and the best teaching staff.

At present its extensive teaching plant and its large annual expenditures are resting upon a capital too small, upon a main source of income—from tuition fees—too uncertain for financial safety. Before many years some millions of dollars will probably come in from gifts and bequests. For at least the next five years, however, the Institute must have large, unrestricted funds for current expenditure if it is to keep the position which it has held from its foundation,—that of the leader among American technological schools.

The Institute needs funds: (1) that it may make its equipment in every way equal or superior to that of every other similar institution; (2) that it may pay its professors and instructors sufficient salaries to enable it to secure and retain upon its staff the best men anywhere to be found; (3) that the professors and instructors may be so far relieved from administrative and routine work as to permit of their having ample time for research and for study; (4) that no young man who shows himself well fitted to receive an Institute education may be shut out for lack of money; (5) that there may be no pause or hesitation in the progress of the Institute toward that complete development of which the school is plainly capable; (6) that, in short, the Institute may continue to stand, as it has stood for forty years, at the head. The past students of the Institute are, in the main, too young (more than one-half of the graduates having left the school within eight years) for them to provide all the needed money; but it is their opportunity, as it should be their privilege, to furnish a substantial portion of this much-needed “emergency fund” during the next five years:—

Because they can appreciate better than others the necessity and the value of this immediate help.

Because their support at this moment of special need will have great moral weight, showing that those who know the Institute best have the strongest faith in her future.

Because such support from the past students will be of great assistance in securing contributions from others in no way connected with the Institute.

Because her past students owe an actual money debt to the Institute of more than a million dollars as a result of the fact that every student costs at least a hundred dollars a year more than he pays in, and because they owe, in addition, a personal and professional debt for the training given them by the Institute which cannot be measured in money.

Because, after the splendid evidences of loyalty which signalized the reunion, a failure to translate that abstract affection into concrete support would be a humiliating ending to a great demonstration.

Because, if they prove themselves willing and able to help the Institute in a substantial way, the past students may reasonably ask and expect to have a voice in the policies and the government of their Alma Mater,—a result which would greatly conduce to her development.

Because, if the Institute loses her position as the leader in technological education and ceases to be an example for other institutions to follow, those who have had her training and who possess her degree will be the chief sufferers.

Because the McKay endowment, even if the Institute possessed it, will not be available for five or ten years; and money is needed for immediate development.

Because, in connection with the negotiations that are in progress with Harvard University, it will enable the Corporation of the Institute to eliminate, to a great extent, financial considerations and to decide upon its educational merits the question of any alliance.

Because, finally, the Tech spirit does not admit of any half-heartedness or any suggestion of failure in anything which Institute men decide to undertake.

The REVIEW predicts for the Technology Fund the certain success which such a movement deserves, and will report fully in the October number the progress which is being made. Meanwhile it urges every past student to contribute to the fund to the full extent of his ability.

GENERAL INSTITUTE NEWS

CORPORATION NOTES

At a meeting of the Corporation on June 3, the following promotions were authorized: C. L. Adams, to be Associate Professor of Drawing; Dr. William D. Coolidge, Assistant Professor of Physico-chemical Research; Dr. George V. Wendell and Professor Louis Derr, Associate Professors of Physics; Professor F. H. Bailey, Associate Professor of Mathematics; Mr. Ralph R. Lawrence, Assistant Professor of Electrical Engineering; Dr. C. H. Warren, Assistant Professor of Geology; Messrs. R. G. Burnham and Archibald Gardner, Instructors in Mechanical Engineering; Mr. Richard B. Earle, Instructor in Organic Chemistry; Mr. Newell C. Page, Instructor in Physics; Mr. Allen L. Appleton, Instructor in Naval Architecture; and Arthur C. Melcher, Research Associate in Physical Chemistry.

Dr. Willis R. Whitney, Professor of Theoretical Chemistry, sent in his resignation, to take effect at the close of this school year. Dr. Whitney will take charge of the research laboratories of the General Electrical Company at Schenectady, N.Y. The resignation was accepted with deep regret. Dr. Whitney was made non-resident Associate Professor of Theoretical Chemistry, the third man to be honored with a non-resident professorship; and it is hoped that he will be able to give occasional lectures at the Institute.

FACULTY NOTES

At the Faculty meeting of June 2, on motion of Professor Cross, the following votes were passed:—

"Voted, That, in view of the importance of the educational issues involved in the present negotiations with Harvard University, the Corporation be requested to allow the Faculty at least until October for any action or expression of opinion which may be asked in accordance with previous statements by the President.

"*Voted*, That, in case any communication is made by the Corporation to the Faculty in connection with the Harvard negotiations during the summer, it be referred for report to the Faculty to a committee consisting of the heads of departments, as follows: Professors Richards, Cross, Lanza, Swain, Chandler, Sedgwick, Dewey, Peabody, Tyler, Bates, Schwamb, Burton, Talbot, Currier, and Duncan."

Extract from the Faculty Records of June 8, 1904

The President thereupon stated that the Corporation acceded most willingly to the request of the Faculty that no action or expression of opinion be asked of the Faculty until October; that it was the almost unanimous wish of the Corporation that any expression of Faculty opinion be individual rather than collective; that, if he had, however, given the Faculty the general understanding that it should have opportunity for presentation of a collective expression of opinion, he would certainly undertake to carry out this understanding at the proper time; that the Corporation fully appreciated the moral rights of the Faculty in the consideration of the whole question; and that nothing of importance should be done during the summer vacation.

The Dean stated that he believed it to be the understanding of the Faculty that the President had stated that there would be opportunity for a collective expression of opinion.

Professor Richards inquired if there would be opportunity given by the Corporation for an informal expression of collective opinion, in view of the advantage which would attend an interchange of ideas in Faculty discussion.

The President stated that there would be opportunity for such procedure.

In summer reading a new departure has been taken this year. The number of instructors at the Institute who have graduated since the requirement was by the Faculty made part of the regular work being now fairly large, they were asked to give to the committee having the matter in charge a frank opinion in regard to the advisability of continuing summer reading and to criticise the books chosen. The views expressed were varied, but a considerable majority were in favor of continuing the requirement. The general opinion, however, was that a wider latitude should be given

in choice of books, and the new lists have been made up with this point in view. A student may now do the bulk of the reading in any single department of letters, and so indulge any taste he may have for science, fiction, history, or poetry. He cannot obtain the required number of points without adding some of the selected books in other lines, but still may largely follow his individual taste. This scheme, like the earlier one, is largely tentative; but it is hoped that the results may prove its practical usefulness.

A very attractive illustrated pamphlet of about fifty pages, giving "a brief account of the foundation, character and equipment" of the Institute, has been published for distribution at the St. Louis Exposition.

"The John Marshall Prize for the year 1904 has been awarded to Davis Rich Dewey (Ph.D. '86) in recognition of the value of his recently published work, entitled 'Financial History of the United States.' This prize consists of a bronze likeness of Chief Justice Marshall, and is awarded annually to a graduate of the university who has produced the best work during the year upon some subject in historical or political science." (From the official list of Commencement appointments of the Johns Hopkins University.)

Professor Richards is one of the list of lecturers at the new Carnegie Technical School at Pittsburg.

ENTRANCE EXAMINATIONS

The entrance examinations were held on June 30, July 1 and 2, and the number of complete applicants, as compared with 192 of last year, was 192; of finals, as compared with 206 of last year, was 241. The number of College Entrance Examinations Board candidates, as compared with the 33 of last year, was 67. The sum of the candidates who purpose entering the Institute in 1904, as compared with the 431 of last year, is 500. If the same per cent. of students is accepted as last year, the entering class will be somewhat larger than that of last year, but not so large as the year before last. The number of preliminary candidates, as compared with the 358 of last year, was 320.

This year for the first time candidates for admission were given the privilege of dividing their entrance examinations between June and September of the same year. They were obliged to pass at least two subjects, and to submit a satisfactory elective in order to receive any credit.

The examination requirement in physics took effect for the preliminary candidates who chose this as one of the preliminary subjects, and the requirement takes effect for all students entering after 1904. This is now cancelled from the list of elective subjects.

DEPARTMENT NOTES

CIVIL ENGINEERING

Notwithstanding the dull times there has been sufficient demand for graduates in civil engineering to offer more positions than there were men. A small number of the graduates, however, are still unemployed, preferring to look for other positions. Mr. C. B. Breed, instructor in civil engineering, will spend the summer in Chicago in the employ of the C. & E. I. R.R. Co. Mr. K. S. Sweet, instructor, will spend the summer in practical sanitary work in the employ of Leonard Metcalf and R. S. Weston. There will be no "summer school" in civil engineering this year, owing to the small number of students who applied. Many of the students in the class of '05 attended the school last summer; and, as the course is now open to both second-year and third-year men, the students of '06 will be able to attend next summer if they desire. It is probable that in the future the school will be held only every other year.

The summer course in surveying will be given by Professor Robbins this year, as usual, in the month of July.

Professor Allen has prepared a set of notes on Railroad Signalling which will henceforth be used by the Senior Class.

MINING ENGINEERING

The new George Crocker Joint Summer School of Mining Engineering, located at the Dives and Pelican Mine, Silver Plume,

Col., has been initiated this year for the first time to give pupils of the Junior Classes in Columbia, Yale, Harvard, and Technology, a practical experience in mining.

At this writing, students at the school report that they are having a good experience and learning a great deal.

The approximate numbers are:—

Columbia	40
Yale	7
Harvard	13
Technology	20

The Colorado School of Mines has also by courtesy been invited to join the school.

During the coming year the Board of Instruction of the Mining Department will consist of Messrs. Richards, Hofman, Lodge, Locke, Hollis, Reed, Litchman, Horton, Faulkner, and Brown. Mr. Schumacher will be retained also as Professor Richards's private assistant. Dr. Fay, on account of his increasing duties and responsibilities in the chemical department, has been obliged to give up the metallographic work. This will be taken up by Professor Sauveur, who for several years previous had charge of his work. Professor Sauveur is the editor of the *Metallographist*, which is the leading paper on this subject in the country; and he is one of the leading authorities on it.

Of the graduating class, numbering about 35, 26 were engaged at the time of graduation or within a few days of leaving. Nine are not yet engaged.

ARCHITECTURE

In his recently published "Explorations in Bible Lands during the Nineteenth Century," Professor H. V. Hilprecht, the editor, gives a very interesting account of the valuable services that were rendered by Joseph A. Meyer, of the class of '91, at the ruins of Nuffar in Babylon in 1894, while he was holding a travelling fellowship. How the Institute prepared Meyer for the responsibility he was to assume is here well told. Rarely had a young man

gone forth with better promise for a full as well as useful life, and his death through devotion to his work came as a shock to those of us who had known him and had felt the influence of his attractive personality. When Meyer joined the Babylonian mission, Mr. J. H. Haynes was its manager.

During the few intervening weeks which he spent at Baghdad he had met a young American, Joseph A. Meyer, a graduate student in the Department of Architecture at the Massachusetts Institute of Technology, Boston, who held a travelling fellowship for two years, and was on his way from India to the Mediterranean coast. Beginning to realize by this time that it would be impossible for him to excavate the temple complex, with its many complicated problems, without the constant assistance of a trained architect, Haynes readily induced Meyer to change his plans and to accompany him without a salary for a year to the ruins of Nuffar.

A second time Providence itself, unwilling to see the most renowned sanctuary of all Babylonia cut up and gradually ruined by tunnels and perpendicular shafts, provided the much-needed specialist, who through Peters's unfortunate recommendation had been withheld so long from the expedition. Indeed, the young architect seemed eminently qualified for the peculiar duties required of him. He was deeply interested in the historical branch of his science; he had gathered considerable practical experience through his study of the ancient monuments in Europe, Egypt, Turkey, and India; he was an accurate draughtsman, and enthusiastically devoted to his subject; and, further than this, he proved a genial and faithful companion to Haynes, who after his last year's isolation from all educated men naturally longed for a personal exchange of thoughts and the uplifting association with a sympathetic countryman to whom he could speak in his own language. The influence of Meyer's active mind and technical knowledge upon the work at Nuffar was felt immediately. Haynes's reports, previously and afterwards often lacking in clearness and conciseness and devoted more to the description of threatening dangers, illness of the servants, and other interesting though secondary questions than to the exposition of archæological facts, aimed now at setting forth the characteristic features of the work in which he was engaged and at illustrating the weekly progress of the excavations by accompanying measurements, diagrams, and drawings. In order to derive the greatest benefit for the expedition from Meyer's presence, the exploration of the temple mound was made the principal object of their united efforts; and, with the exception of a few

weeks in September, all the laborers were concentrated around the *zig-gurrat*. The trenches grew deeper every day, and Ashurbânapal's lofty terraces rose gradually out of the encumbering mass of later additions. The hot and trying Babylonian summer, more uncomfortable and inconvenient than dangerous to the health, passed by without any noteworthy incident. But, when the cooler nights indicated the approaching fall, and brought with them the usual colds and chills, frequently complicated by dysentery and malarial poisoning of the human system, Meyer's weakened body proved unequal to the demands made upon it.

At the end of September his physical powers of endurance gradually gave way. For seven weeks more he endeavored hard to overcome the effects of the malignant disease, and remained faithfully at his post. By the end of November his condition had become so critical that, notwithstanding the extraordinary hardships of the journey, it became necessary to convey him by boat to Hilla, and from there in a covered litter to Baghdad. But his case was beyond human aid long before he left Nuffar. On Dec. 20, 1894, he died in the house of Dr. Sundberg, Haynes's successor as United States consul at Baghdad, like George Smith having fallen a brave soldier in the cause of science. He was buried in the little European cemetery of the city on the banks of the Tigris. In the course of time the sand-storms of 'Irâq may efface his solitary grave. But what matters it? His bones rest in classic soil, where the cradle of the race once stood; and the history of the resurrection of ancient Babylonia will not omit his name from its pages.

CHEMISTRY

Messrs. George R. Taylor, S.B., and Roy W. Moore, S.B., of the Worcester Polytechnic Institute, have received appointments as assistants in inorganic and analytical chemistry respectively, Mr. N. E. Tousley, A.B. of the University of Michigan, as assistant in analytical chemistry, and Mr. Edward W. White, S.B. (M. I. T. '04), as assistant in industrial chemistry.

In the latter part of April, Professor Talbot spent a fortnight among some of the Western universities, including those of Michigan, Chicago, Wisconsin, and Illinois, with the purpose of looking into methods of teaching and administration as practised in those institutions.

The members of the instructing staff of the Chemical Depart-

ment gave a complimentary dinner to Professors Whitney and Norris at the University Club June 1. The affair was most informal, and gave opportunity for expression of the keen regret felt by all the members of the department at the loss in comradeship as well as scientific inspiration which must result from the withdrawal of these able and enthusiastic workers.

The party taking part in the summer course of industrial chemistry left Boston June 8, and numbered about fifteen, including Professors Thorp and Walker. They will visit North Adams, Mechanicsville, Glens Falls, Syracuse, Olean, Silver Springs, Rochester, Buffalo, and Niagara Falls. The party will disband on the 25th at Buffalo.

PHYSICS

Following is a short description of the power plant and its work in supplying electrical energy for the electro-chemical and heat laboratories.

The plant consists of a 50-horse-power direct current motor, belted to the 37-kilowatt alternator formerly used in the dynamo-room in the Walker Building. During the year alternating current has been supplied to the lecture-rooms, as needed, and the apparatus has worked smoothly and well. Within a few days there has been completed and installed a large transformer, designed for a steady output of 50 kilowatts, but capable of supplying much more for a short time.

This transformer was designed in the department, and the core and primary coils built by the Pittsburg Transformer Company. Mr. F. C. Sutter, '93, of the company, is our creditor for numerous valuable suggestions and substantial pecuniary aid in its construction. It differs from the ordinary transformer in having 16 secondary coils, each capable of furnishing 300 amperes at 10 volts. By a very simple arrangement of 32 switches on a slate board it is possible to make up any desired combination of these coils in series and parallel, thus getting any multiple of 300 amperes at any voltage from 10 to 160; that is, within the power limit of 50 kilowatts. By trial it has been found that the combinations can be changed

to suit the changing conditions of an experiment with all necessary rapidity.

Thus far the apparatus has been used only to a part of its capacity in electric furnace work, but it has proved satisfactory; and it is already found very convenient to have at instant command a voltage which can be varied to suit requirements. Incidentally, this economizes both power and equipment, for resistances need be employed only to make the finer adjustments. There is no need of the costly and wasteful rheostats which would be required if only one or two supply voltages were available. For example, the Moissan furnace takes 600 amperes at 40 volts. A graphite tube furnace starts with 250 amperes at 10 volts, running up to 400 amperes or more at 30 volts, the necessary power being easily and quickly supplied by throwing the appropriate switches. Further, since the secondary coils are entirely independent, except as connected through the switches, it is possible to carry on simultaneously several such operations.

To provide for future extension of the laboratory work, the transformer has a capacity beyond that of the present generating plant; and, since it is possible that the power supply may be changed in character in an enlarged plant, the transformer has been designed to operate either at 1,100 or 2,200 volts and either 60 or 120 cycles. The Institute is thus in a position to take advantage of various conditions without sacrificing any apparatus if any changes are effected in the power plant.

NAVAL ARCHITECTURE

The first class of naval constructors were graduated June 7 with the degree of Master of Science. Owing to the pressure of work in the Bureau of Construction and Repair, the work of the class was completed the first week of April, and the constructors were assigned to some of the important navy yards, Mr. William McEntee going to Mare Island, Mr. William B. Furguson going to New York, and Mr. J. A. Spilman to Norfolk. At the Tech reunion dinner, word was received that these gentlemen had formed the Annapolis Association.

Through the liberality of Dr. Charles G. Weld the Department of Naval Architecture has received the entire collection of books on naval architecture and allied subjects from the library of the late Mr. Henry Bryant. In addition to a large number of naval and standard works, including a complete set of the Proceedings of the Institute of Naval Architecture (England), Scott Russell's classical work on Naval Architecture, and Admiral Pâre's notable lithograph work on ships of all times and nations, this collection of books is probably unique in the number of old and rare works on shipbuilding in English, French, Dutch, and Latin, dating back to the fifteenth century.

SOCIETY OF ARTS

Annual report of the Executive Committee presented at the forty-second annual meeting of the society, May 19, 1904.

The first meeting of the society for the present year was held on Oct. 15, 1903. Fifteen meetings have been held, with an average attendance of 175.

The following papers have been read:—

1. "American Rapid Transit in the Light of European Experience." Mr. John P. Fox.
2. "Solar Evaporators: Their Development and Use in Water Engineering." Captain W. H. Jaques.
3. "Mosquitoes, and Suggestions for their Extermination." Mr. Lyman W. Underwood.
4. "One Field of Twentieth Century Science." Professor Simon Newcomb.
5. "Influence of Food Preservatives on Digestion." Dr. H. W. Wiley, chief chemist, United States Department of Agriculture.
6. "Steam Turbines." Mr. Charles Garrison, of the DeLaval Steam Turbine Company.
7. "The Use of Electricity in Metallurgy." Professor J. W. Richards, of Lehigh University.
8. "The Chemical Work of the United States Geological Survey." Dr. F. W. Clarke, chief chemist, United States Geological Survey.
9. "The Action of Radium and Ultra-violet Light on Minerals and Precious Stones." Mr. George F. Kunz.

10. "The Preservative Treatment of Wood." Dr. S. P. Sadtler.
11. "The Measurement of the Heat of Stars." Professor E. F. Nichols, of Columbia University.
12. "The History and Work of the Smithsonian Institution." Dr. Cyrus Adler, librarian, Smithsonian Institution.
13. "The Recent Conflagration in Baltimore." Professor C. L. Norton, of the Institute.
14. "Coinage and the Precious Metals." Mr. George E. Roberts, director of the United States Mint.
15. "Mechanical Flight." Mr. J. Emery Harriman, Jr.

At the beginning of the year the associate membership of the society was 353. Of these members 2 have died and 8 have resigned. 14 associate members have been elected, making the present membership 357. Last year there were 37 associate life members, 2 of whom have died. During the year 1 life member has been elected. 4 associate members have become life members in accordance with the by-laws of the society, which provides for the transfer to the list of life members of the names of associate members who have paid twenty annual assessments.

The *Technology Quarterly* has appeared as usual, and has contained the Proceedings of the Society of Arts, together with a full complement of articles contributed by various authors. Among these may be mentioned an article by Professor A. A. Noyes, which is the first of a series that will embody a new system of qualitative chemical analysis. The September number contained an elaborate and thoughtful report on Engineering Education from the pen of that eminent engineer, Dr. E. L. Corthell, dealing chiefly with the methods and facilities for instruction to be found in the engineering schools of the principal European countries. These are compared with two schools of this country, and important conclusions are drawn as to our needs.

The Mining Department of the Institute is well represented by a number of important contributions, including three articles contributed to the new edition of the *Encyclopædia Britannica*, which we were able to reprint by the kind permission of the publishers. From Professor W. O. Crosby has been received a notable series

of papers on the local geology of Massachusetts, containing results of investigations made by him under the auspices of the Metropolitan Water and Sewerage Board and the Charles River Dam Commission.

While several departments of the Institute are usually well represented in the *Quarterly*, there are others from which contributions are rarely received. It is much to be regretted that the *Technology Quarterly* cannot reflect more completely the manifold scientific activity of the Institute.

The remarkably small deficit in the account of the Society of Arts, as shown in the last annual report of the Treasurer of the Institute, is due in large measure to the activity of Mr. F. H. Rand, Bursar of the Institute, who at considerable personal inconvenience and without recompense obtained for the *Quarterly* advertising contracts that reduce the net cost of publication to a marked degree. In recognition of this voluntary service the Board of Publication at its meeting passed a vote of thanks to Mr. Rand.

(Signed)

GEO. W. BLODGETT,
EDMUND H. HEWINS,
CHARLES T. MAIN,
JAMES P. MUNROE,

} *Executive Committee.*

THE UNDERGRADUATES

JUNIOR WEEK

Junior Week is in many ways the most important event in undergraduate life at the Institute. For a few days laboratories and lessons are as if they were not, and even the most diligent worker relaxes a bit. The Junior Week of the class of '05 went off with even more than usual *éclat*. Never were there such fine teas, such an excellent concert, such a show, and, above all, so many and such pretty girls, say the Juniors.

Junior Week started with the concert of the musical clubs Wednesday evening, April 27, in the New Century Building. Poor weather kept away many, but a good-sized crowd was present, including many professors and their wives. The concert was a great success, the mandolin club being especially well received. After the concert there was dancing until midnight. The matrons were Mrs. Cecil H. Peabody, Mrs. William T. Sedgwick, and Mrs. Davis R. Dewey. Many of the fraternities also gave teas on Wednesday afternoon. On Thursday the *Technique* rush took place. For various reasons it seemed best to hold the rush out of doors this year, and so the ground back of the Art Museum was secured. A stout shed was built, and from this the books were given out. In spite of the rain a large crowd took part in the rush, which was no less fierce than usual, although no casualties were reported. The general opinion is that this year's book is fully up to the high standard of past years. The *Technique* board was composed of the following men: G. B. Perkins, editor-in-chief; Waldso Turner, business manager; N. A. Richards, art editor; G. B. Jones, William Green, N. Lombard, associate editors; J. McC. Lambie, society editor; E. T. Steel, athletic editor; A. J. Amberg, G. DeW. Marcy, statisticians; H. H. Kennedy, B. E. Geckler, associate art editors; C. W. Johnston, W. D. B. Motter, assistant business managers.

Thursday afternoon the annual TECH tea was given in the general

library. Matrons, Mrs. George F. Swain, Mrs. F. A. Robbins, Mrs. M. E. Bushnell. Thursday evening the Prom was held in the small ball-room of the Somerset. The hall was elaborately decorated with palms. Though small in size, the Tech Prom compares most favorably with those of other colleges. Seventy-five couples attended the '05 Prom, and all were agreed that everything was quite as it should be. The matrons were Mrs. Theodore J. Amberg, Mrs. Samuel J. Mixter, Mrs. George V. Wendell, Mrs. George H. Seyms, Mrs. Willis R. Whitney. The committee follows: Arthur John Amberg, Norman Lombard, Grosvenor DeWitt Marcy, William D. B. Motter, Jr., Edward Thomas Steel, 2d, Waldso Turner.

On Friday the main performance of the Tech show was given. The show this year was generally recognized as the best that has been done in this line at the Institute. "Simon Pure Brass," entirely the work of Tech men, was very well received at Malden on Monday of Junior Week; and the Tuesday and Friday performances in Boston were veritable triumphs for cast and author and composers. It is hard to pick out any one person who did particularly well, for the whole company was well balanced, and all worked for the success of the show rather than for personal effect. Bancroft, '07, as Glycerine, was perhaps the greatest hit. In acting and appearance he made as fine a soubrette as is often seen. Davis, '05, as Simon P. Brass, the leading comedy part, repeated his success of last year. He is an accomplished comedian, and has added greatly to the shows in which he has taken part. Butts, '05, in his solo dances, and Lynch, '05, and Abbott, '06, in the duet, scored decided hits. The chorus was well trained and very effective. The managers should come in for no small share of the praise for the successful performance.

General manager, P. M. Smith, '04, of Syracuse, N.Y.; business manager, Ernest Harrah, '04, of New York City; assistant business managers, F. S. Hamilton, '07, of South Blue Hill, Me., R. W. Parlin, '07, of Wollaston; stage manager, P. E. Hinkley, '05, of Portland, Me.; assistant stage managers, K. E. Terry, Jr., '06, of New Bedford, R. G. Kann, '07, of Pittsburg.

The libretto is by John A. Fremmer, '04; the music, by Frank S. Farrell, '04, George H. Shaw, '04, John A. Fremmer, '04, Arthur J. Amberg, '05, Herbert M. Wilcox, '05, Emerson H. Packard, '07, Ralph B. Sanders, '07.

The principal members of the cast are as follows:—

THE CAST

Simon Pure Brass, the balloonist	Roswell Davis, '05
J. Quincy Granite, a millionaire	Paul McClary Paine, '04
Patty Granite, his daughter	U. James Nicholas, '06
Jack Hazard, her lover	Frederick L. Higgins, '04
Glycerine McClusky, Patty's friend	Albert Fitch Bancroft, '07
Marsh Mallow, athletic trainer	Arthur Hooper Langley, '04
McClosky, innkeeper	Selskar Gunn, '04
Miss Primrose, schoolmistress	Albert Henry Donnewald, '07
Lady from Philadelphia	Rinker Kibbey, '05
Lunatic	Joseph Daniels, '05
Chinaman	John Missroom Morris, '06
Lounger	Rutherford Bingham, '06
Biff, the cat	Walter Thomas Keen, '05
Ikkey, the monkey	Albert Manton Reed, '04
Gold Dust Twins	{ Ernest Maxwell Smith, '06 Charles Wolston Coffin, '07
Solo Dancer	Walter Matthews Butts, '05
Clowns	{ Benjamin Karl Sharp, '07 Alfred Kellam Tylee, '07

PROFESSIONAL SOCIETIES

Civil Engineering Society.—The society held its annual meeting on April 22, and elected the following officers for the ensuing year: president, H. M. Nabstdt; vice-president, A. H. Langley; secretary, L. G. Blodgett; treasurer, W. A. Young; executive committee, N. P. Gerhard, chairman, L. E. Robbe, C. H. Smith; programme committee, C. Saville, Jr., chairman, C. R. Adams, L. E. Robbe, E. F. Kriegsman.

The Civil Engineering Society and Walker Club Debate.—The debate between the Civil Engineering Society and the Walker

Club was held May 5, S. A. Greeley, E. F. Kriegsman, and O. C. Merrill, of the Civil Engineering Society, supporting the affirmative, and D. K. Keller, E. F. Porter, and M. H. Schwartz, of the Walker Club, upholding the negative. The question, "*Resolved*, That Congress shall appropriate \$8,000,000 a year for three years for the permanent improvement of roads in the States," was warmly contested before an appreciative audience. Secretary Tyler, Dean Burton, and Professor Noyes, acting as judges, were unable to reach a decision, the Walker Club offering the better presentation and the Civil Engineering Society the more able rebuttal.

Mining Engineering Society.—A regular meeting of the Mining Engineering Society was held at the Union May 9. A number of members of the Harvard Mining Club accepted the invitation of the Institute Society to attend the meeting. The speaker was Professor A. Sauveur, M. I. T. '89, of Harvard University. He gave a short but interesting talk on the growth of the blast furnace.

The last and annual meeting of the society was held on May 13. The reports of the secretary and treasurer were accepted. Professor C. L. Norton was elected to honorary membership. R. H. Allen, '05, was elected president; C. W. Johnston, '05, vice-president and treasurer; H. L. Williams, '06, secretary; and E. Burton, '05, H. E. Darling, '06, members of the executive committee for the coming year.

Architectural Society.—The annual dinner of the Architectural Society was held May 5 at the Westminster.

Chemical Society.—On April 15 the Chemical Society held a smoker at the Union. Professor Jones, of Johns Hopkins, spoke interestingly of some experiments and theories of physical-chemistry in regard to some reactions, giving much importance to the work of J. J. Thompson.

The society held its first annual dinner at the Union on May 4. The election of officers for the coming year preceded the dinner, and the following men were chosen: president, W. H. Keen; vice-president, E. W. Wiggins; secretary, H. P. Carruth; treasurer, G. B. Perkins; member of the executive committee, F. M. Eaton.

Co-operative Society.—The board of directors of the Co-operative

Society held its annual meeting Tuesday, May 10. The following is the treasurer's report:—

1903-04.			
April 1, balance Home Savings Bank . . .	\$471.11		
May, interest on deposit,	7.79		
From sale of membership tickets	238.50		
Profits from sales	602.97		
From advertisements in affiliated lists	95.00		
Interest on deposit to October	8.16		
			21.14
Paid cut signature		1.00	
Paid circulars		4.50	
Duplicate medallions for frame		2.00	
Gilding same50	
Frame and lettering		4.00	
Postage24	
January, society insert, <i>Technique</i> , '05		5.00	
F. H. Rand, Bursar, 12 scholarships at \$75		900.00	
April 1, '04, balance Home Savings Bank		480.15	
	\$1,423.53		\$1,423.53

The report shows a small increase over last year and also an increase of scholarship appropriation. At the last meeting \$900 were voted for that purpose, and twelve men were awarded \$75 each.

"During the past few years the society has appropriated \$3,750 for scholarships, and has appropriated a total of \$8,712.50 since its foundation, assisting seventy-one students to finish their course of study at the Institute.

The following comprise the board for the ensuing year: Henry S. Pritchett (of the Faculty); Harry M. Nabstedt, president; Rich-

ard W. Senger, vice-president; Sidney A. Smith; Frederick B. Guest, secretary; Francis G. Baldwin; A. D. MacLachlan, treasurer.

CLASS ORGANIZATIONS AND CLUBS

Technology Civic Club.—The Technology Civic Club organized May 13. Officers were elected as follows: president, A. P. Mathesius; vice-president, H. M. Wilcox; secretary, M. E. Vinton, Jr.; treasurer, W. F. Englis. An executive committee, consisting of the above men and Mr. Ferry of the Institute, was appointed and instructed to prepare a constitution. Assemblyman Furber, of the 10th Boston district, addressed the club on the subject of the responsibility and opportunity of the college man in present-day politics.

The object of this club is to promote interest among the students in political questions of the day and to aid men who feel interested in understanding the issues at stake in the coming Presidential election.

Musical Clubs.—The annual spring concert and dance of the Musical Clubs was held in the New Century Building on April 27. The matrons were Mrs. Cecil H. Peabody, Mrs. William T. Sedgwick, and Mrs. Davis R. Dewey.

A meeting of the Musical Clubs was held May 16 to elect officers for the coming year, and resulted as follows: president, Jackson, '06; vice-president, Lawton, '06; secretary, Powell, '06; manager and treasurer, Vonder Horst, '06. The meeting then adjourned, and each club held special elections. Mandolin Club: leader, Powell, '06; manager, Cady, '06. Glee Club: leader, Babcock, '05; manager and recorder, Clark, '06. Banjo Club: leader, Fales, '07; manager, Killion, '06.

Senior Dinner.—The final class dinner of the class of '04 was held April 22 at the Copley Square Hotel.

Deutscher Verein.—At a meeting of the Deutscher Verein May 6 the following officers were elected for next year: president, Eugen Kriegsman; vice-president, Harry M. Nabstedt; secretary, Edgar C. Steinharter; treasurer, Edwin Frank; executive committee, Eugen Kriegsman, Adolph Zuest, Fred Lutze.

THE ANNUAL MEET

The annual spring meet took place April 23. The events were as follows:—

1-MILE RUN.—Won by E. L. Wilson, '06; G. D. Marcy, '05, second; R. W. Rose, '06, third; L. Allen, '07, fourth. Time, 4 m. 54 1-5 s.

100-YARD DASH.—First heat won by C. Lang, '04; L. B. Turner, '05, second. Time, 11 s. Second heat won by H. L. Williams, '06; J. H. Leavell, '07, second. Time, 11 s. Third heat won by W. M. Van Amringe, '06; R. Howe, '06, second. Time, 10 4-5 s. Fourth heat won by K. W. Richards, '07; E. P. Noyes, '07, second. Time, 11 s. Fifth heat won by W. B. Boggs, '04; M. T. Lightner, '06, second. Time, 11 s. Sixth heat won by E. B. Snow, '05; H. L. Hertz, '06, second. Time, 11 s.

SEMI-FINAL AND FINAL.—First heat won by H. L. Williams, '06; C. Lang, '04, second; L. B. Turner, '05, third. Time, 10 4-5 s. Second heat won by W. B. Boggs, '04; M. T. Lightner, '06, second; K. W. Richards, '07, third. Time, 10 4-5 s. Final heat won by M. T. Lightner, '06; W. B. Boggs, '04, second; H. L. Williams, '06, third; C. Lang, '04, fourth. Time, 10 2-5 s.

RUNNING HIGH JUMP.—Won by R. D. Farrington, '05; H. P. Farrington, '07, second; L. D. Davenport, '07, third; C. P. Burleigh, '06, and H. L. Dean, '05, tied for fourth. Height, 5 ft. 4 in.

120-YARD HIGH HURDLES.—First heat won by R. D. Farrington, '05; E. P. Noyes, '07, second. Time, 17 4-5 s. Second heat won by C. R. Haynes, '04; R. D. Emerson, '05, second. Time, 18 s. Final heat won by C. R. Haynes, '04; R. D. Farrington, '05, second; E. P. Noyes, '07, third; R. D. Emerson, '05, fourth. Time, 17 2-5 s.

880-YARD RUN.—Won by E. L. Wilson, '06; M. A. Coe, '06, second; C. R. Boggs, '05, third; W. A. Moffatt, '06, fourth. Time, 2 m. 10 4-5 s.

PUTTING 16-POUND SHOT.—Won by J. H. Polhemus, '06; V. W. Paquet, '05, second; C. Hoy, '04, third; F. Barrows, '07, fourth. Distance, 33 ft. 10 in.

2-MILE RUN.—Won by E. H. Lorenz, '05; R. Burke, '05, second; P. J. Clapp, '06, third; G. H. Ruggles, '06, fourth. Time, 10 m. 30 s.

THROWING 16-POUND HAMMER.—Won by B. E. Lindsly, '05, W. S. Gouinlock, '05, second; J. Tetlow, '07, third; H. E. Walker, '07, fourth. Distance, 114 ft. 6 in.

POLE VAULT.—Won by G. A. Curtis, '04; R. S. Phillips, '04, second; R. D. Farrington, '05, third; J. Tetlow, '07, fourth. Height, 10 ft. 10 3-4 in.

220-YARD DASH.—First heat won by J. H. Leavell, '07; H. L. Williams, '06, second. Time, 23 4-5 s. Second heat won by R. Howe, '06; L. B. Turner, '05, second. Time, 24 2-5 s. Third heat won by M. T. Lightner, '06; E. R. Lawrence, '06, second. Time, 24 4-5 s. Final heat won by M. T. Lightner, '06; R. Howe, '06, second; H. L. Williams, '06, third; J. H. Leavell, '07, fourth. Time, 22 4-5 s.

THROWING DISCUS.—Won by C. Lang, '04; W. S. Gouinlock, '05, second; H. P. Boynton, '05, third; B. E. Lindsly, '05, fourth. Distance, 95 ft. 11 in.

220-YARD LOW HURDLES.—First heat won by C. R. Haynes, '04; E. P. Noyes, '07, second. Time, 28 2-5 s. Second heat won by H. H. Needham, '04; W. M. Van Amringe, '06, second. Time, 29 s. Final heat won by E. P. Noyes, '07; C. R. Haynes, '04, second; W. M. Van Amringe, '06, third; H. H. Needham, '04, fourth. Time, 28 s.

440-YARD RUN.—Won by M. T. Lightner, '06; R. Howe, '06, second; G. B. Manson, '04, third; C. F. West, '06, fourth. Time, 55 4-5 s.

RUNNING BROAD JUMP.—Won by C. Lang, '04; C. F. Northrup, '06, second; L. B. Turner, '05, third; G. D. Luther, '07, fourth. Distance, 19 ft. 11 in.

Table of Points.

	'04	'05	'06	'07
100-yard dash	7	—	4	—
220-yard dash	10	—	—	1
440-yard run	9	—	2	—

	'04	'05	'06	'07
880-yard run	9	2	—	—
1-mile run	7	3	—	1
Low hurdles	2	—	4	5
High hurdles	—	4	5	2
High jump	½	5½	—	5
Broad jump	3	2	5	1
Discus	—	6	5	—
Hammer	—	8	—	3
Shot	5	3	2	1
Pole vault	—	2	8	1
2-mile run	3	8	—	—
Totals	55½	43½	35	20

Total points for championship of year: 1906, total, 68 points; 1905 total, 60½ points; 1907, total, 53½ points; 1904, total, 53 points.

THE DARTMOUTH MEET

The Technology Track Team was defeated by the Dartmouth team May 7 at the Newton Athletic Club grounds.

The summary:—

100-YARD DASH.—Won by G. L. Swasey, D.; H. L. Jordan, D., second; W. B. Boggs, M. I. T., third; C. Lang, M. I. T., fourth. Time, 10 s.

220-YARD DASH.—Won by G. L. Swasey, D.; H. L. Jordan, D., second; H. L. Williams, M. I. T., third; R. Howe, M. I. T., fourth. Time, 23 s.

440-YARD RUN.—Won by LeB. Turner, M. I. T.; H. Haley, D., second; G. S. Gould, M. I. T., third; W. Jennings, D., fourth. Time, 55 s.

880-YARD RUN.—Won by F. French, D.; R. P. Pritchard, D., second; M. A. Coe, M. I. T., third; C. R. Boggs, M. I. T., fourth. Time, 2 m. 6 4-5 s.

1-MILE RUN.—Won by C. A. Campbell, D.; E. L. Wilson, M. I. T., second; G. H. Chapman, M. I. T., third; G. D. W. Marcy, M. I. T., fourth. Time, 4 m. 41 3-5 s.

2-MILE RUN.—Won by E. H. Lorenz, M. I. T.; P. Burke, M. I. T.,

second; L. T. Wallace, D., third; C. A. Campbell, D., fourth. Time, 10 m. 25 s.

120-YARD HURDLES.—Won by C. R. Haynes, M. I. T.; E. P. Noyes, M. I. T., second; M. W. Bullock, D., third; R. D. Farrington, M. I. T., fourth. Time, 16 2-5 s.

220-YARD HURDLES.—Won by C. R. Haynes, M. I. T.; E. P. Noyes, M. I. T., second; W. M. Van Amringe, M. I. T., third; A. Brown, D., fourth. Time, 27 2-5 s.

HIGH JUMP.—Won by R. D. Farrington, M. I. T.; M. W. Bullock, D., second; G. A. Curtis, M. I. T., third; D. C. Colesworthy, D., fourth. Height, 5 ft. 6 in.

SHOT PUT.—Won by F. H. Brown, D.; H. C. Blake, D., second; A. W. Gage, D., third; A. H. Jeffries, D., fourth. Distance, 38 ft. 6 $\frac{1}{2}$ in.

RUNNING BROAD JUMP.—Won by M. W. Bullock, D.; H. R. Blythe, D., second; W. M. Van Amringe, M. I. T., third; C. Lang, M. I. T., fourth. Distance, 20 ft. 6 in.

16-POUND HAMMER THROW.—Won by B. E. Lindsly, M. I. T.; J. W. Gage, D., second; M. Myers, D., third; W. J. Knapp, M. I. T., fourth. Distance, 119 ft. 5 in.

POLE VAULT.—Won by B. F. Hazen, D.; G. A. Curtis, M. I. T., second; A. R. Blythe, D., third; J. Tetlow, M. I. T., fourth. Height, 11 ft.

THROWING DISCUS.—Won by J. M. Marquess, D.; A. H. Jeffries, D., second; C. Lang, M. I. T., third; D. C. Colesworthy, D., fourth. Distance, 103 ft. 5 $\frac{1}{2}$ in.

Score.—Places counted: first, 5; second, 3; third, 2; and fourth, 1 points.

Events.

<i>(In Order of Completion.)</i>	<i>Tech.</i>	<i>Dartmouth.</i>
1-mile run	6	5
High jump	7	4
440-yard run	7	4
Shot put	0	11
100-yard dash	3	8
120-yard hurdles	9	2

	<i>Tech.</i>	<i>Dartmouth.</i>
880-yard run	3	8
Broad jump	3	8
2-mile run	8	3
Hammer throw	6	5
Discus throw	2	9
220-yard dash	3	8
220-yard hurdles	10	1
Pole vault	4	7
	—	—
Totals	71	83

AMHERST MEET

In the first dual meet ever held in Pratt Field at Amherst the New England champions were defeated by Tech in a close and exciting contest,—Amherst, 62, Tech, 64.

NOTES

It is announced that the die for the Cabot medal has arrived from Europe. The main figure is that of a splendid specimen of perfect manhood, standing erect. Both arms are extended. One hand supports the figure of a winged victory, the other a palm branch. The reverse will tell for what reason the medal was awarded. This side shows just a hint of Rogers at the top. It will be remembered that the medal is the gift of Samuel Cabot, who is the donor of the Field Day cup and the gentleman to whom this year's *Technique* is dedicated. The medal will be given to those who have shown the most marked physical development during the year as a result of careful training.

At the General Convocation April 28 Mr. Jacob Riis spoke.

The 1906 *Technique* board has elected Maxwell A. Coe as editor-in-chief and Charles F. W. Wetterer business manager.

THE GRADUATES

THE WASHINGTON SOCIETY OF THE M. I. T.

The last smoker was held at the "Octagon House" on March 24. As has frequently occurred of late, the number in attendance exceeded the optimistic expectations of the "steward," but prompt and energetic action on his part prevented any one from leaving hungry or thirsty. The guest of the evening was Hollon C. Spaulding, '87, of New York, who entertained those present by describing the wonderful performance of a recent invention called the "acousticon," a device for enabling the deaf to hear. Everybody was given an opportunity to try the instrument, but it was not believed that any one would need to use it when sounding the members of this society upon the proposed "combination of effort" of the Institute and Harvard. The meeting was unanimous in the expression of the opinion that the mere suggestion of such a relationship was most harmful to the Institute, and every one deplored the continued agitation of the matter in the public press. After a thorough discussion, in which nearly every one took part, it was voted unanimously to send to President Pritchett the following resolutions:

Whereas the members of this society have heard, with surprise and regret, persistent rumors of a possible merging or union of the Massachusetts Institute of Technology with another institution, and have become alarmed by their wide discussion in the press, among the alumni, and by the public at large; and

Whereas it is their firm belief that any such merging or union would result only to the detriment of their Alma Mater; and

Whereas William Barton Rogers, the founder of the Institute, during times of great financial depression, courageously repudiated all such propositions; and

Whereas General Francis A. Walker, under whose wise guidance the Institute developed in strength and high standing, likewise condemned

unhesitatingly any plans tending to sink the identity of our Alma Mater into that of any other body,—therefore be it.

Resolved, That they enter their emphatic and unqualified protest against every proposition looking toward the alliance or union of the Massachusetts Institute of Technology with any college or university, however prominent in the educational world; and be it further

Resolved, That they express their confidence that the President, the Corporation, and the Faculty will emulate the example set by the founder of the Institute and upheld by his successors.

By the Executive Committee,

(Signed) PROCTOR L. DOUGHERTY, *Chairman.*
 WINTHROP COLE.
 ALBERT S. MERRILL.
 WILLIAM J. RICH.
 FRANÇOIS E. MATTHES.

WASHINGTON, D.C., April 22, 1904.

The president of the society, Mr. Proctor Dougherty, '97, expressed the sentiment here in his speech at the alumni banquet in Boston, June 8.

Those who were fortunate enough to attend the reunion brought back glowing accounts of the proceedings, and it has been planned to hold an "echo" meeting here June 20. Among the men who went to the reunion from here were Proctor L. Dougherty, '97, William J. Rich, '84, François E. Matthes, '95, A. W. Proctor, '99, F. B. Galaher, '02, Frederick L. Edwards, '97, William L. Morris, '99, and Willard Colman, '96.

Since our last letter there have been a great many changes among our members, especially among those connected with the Geological Survey. The officers of the society urge all new-comers to the city to make themselves known. The condition of the society is highly gratifying.

ALBERT S. MERRILL, '00, *Secretary,*
Bureau of Standards.

THE TECHNOLOGY CLUB OF THE MERRIMACK VALLEY

The last meeting of the season was held on Thursday evening, May 12, at the Lowell Textile School, Lowell. About fifty men were present, including a number from Lawrence. Before the meeting the visitors were shown through the school by the instructors, a number of whom are Technology men. At the session President Phelps presided. Mr. Cumnock, president of the Corporation, spoke briefly, welcoming the men to the school. Mr. C.-E. A. Winslow, '98, spoke on alumni matters at the Institute, principally in reference to the Harvard-Tech union.

Professor Crosby was the principal speaker of the evening, and spoke at some length on the process of mercerizing as applied to cotton yarn and fabrics. His paper was illustrated by numerous samples.

At the close of the meeting Mr. Bowers rose, and in behalf of the Lowell members of the club invited those present to partake of a spread provided. A most enjoyable evening was spent.

JOHN A. COLLINS, JR., '97, *Secretary,*
79 Tremont Street, Lawrence.

THE TECH SOCIETY OF PHILADELPHIA

A very successful meeting was held on April 15 at the T Square Club. At this meeting the following officers were elected: Mr. Benjamin Adams, '95, president; Mr. William George Snow, '89, vice-president; Mr. S. A. Gardner, Jr., '02, secretary-treasurer; Mr. Arthur W. Ayer, '89, Mr. Chester F. Drake, '98, Mr. Frank H. Keisker, '97, Mr. J. Peterson Ryder, '84, Mr. Samuel S. Sadtler, '95, Mr. Paul Weeks, '02, executive committee.

S. A. GARDNER, JR., '02, *Secretary,*
Woodbury, N.J.

THE ANNAPOLIS SOCIETY OF THE M. I. T.

The Annapolis Society of the M. I. T. was organized on June 8 with the following officers: president, A. N. Brown, '80; vice-

president, G. E. Merrill, '93; secretary, Charles N. Stratton, '00; treasurer, P. B. Cooper, '00.

CHARLES N. STRATTON, '00, *Secretary,*
195 Hanover Street.

THE CONNECTICUT VALLEY ASSOCIATION, M. I. T.

The Connecticut Valley Alumni Association held its fourth triennial banquet in Springfield recently. President Pritchett was the guest of honor, and gave an address on the progress of the Institute during the past three years and on its aims for the future.

NEWS FROM THE CLASSES

1868.

PROF. ROBERT H. RICHARDS, *Sec.*, Mass. Inst. of Technology,
Boston.

At the Tech reunion seven members of the class were present,—Hall, Forbes, Tolman, Richards, Jackson, Stone, and Whitney. Regrets were received from Conant, Hoyt, Sears, and Tilden, all of whom were absent on account of business engagements.—Tilden reports he left Jacksonville last September, spent the winter in locating surveys of the Grand Trunk Pacific in Western Canada, after which he returned to his home in Jamestown, No. Dak., where he is at present acting city engineer. He thinks he may go to Virginia, Mont., in connection with a mining scheme in the near future.—Sears sends congratulations that '68 won the stunt prize at the reunion.—Eben Stevens regrets that he was unable to be present on account of sickness.—Richards is at present engaged in solving a concentration problem for iron ore in Pennsylvania, and one for sulphur in Virginia.

1870.

PROF. CHARLES R. CROSS, *Sec.*, Mass. Inst. of Technology, Boston.

J. R. Osgood, Sierra Madre, Cal., will be in Boston in August at the National Encampment, Grand Army of the Republic.—During the Tech reunion the members of the class of '70 lunched with Mr. Samuel Cabot at the Tennis and Racquet Club. There were present Messrs. F. Brooks, C. H. Breck, S. Cabot, C. R. Cross, C. W. Hinman, and F. R. Page.

1874.

CHARLES F. READ, *Sec.*, Old State House, Boston.

The class association has reason to be gratified at the goodly number of its members who attended the various gatherings during the recent Tech reunion. Naturally, the second day drew together the largest number; and at the reception at the Hotel Brunswick and the following dinner at the Hotel Westminster of the classes from '68 to '77, and also at the strenuous "Pop" concert at Symphony Hall in the evening, the following men, some of whom had not greeted their former classmates for years, were present: Arnott, Baldwin, Barrus, Browne, Burrison, Chase, Doane, Haberstroh, Halsall, Mansfield, Read, Robinson, Silsbee, and Warren; and the others were with us in memory, if not in the flesh. The present year has been a very busy one for the association; for, in addition to being in evidence at the Tech reunion, the class celebrated last January, with a family gathering, the thirtieth anniversary of the graduation of the class of '74. This notice may be appropriately closed with a quotation from a poem written for a class reunion in 1899:—

"Our Alma Mater, last of all:
To her we bend the knee;
Although her days are prosperous now,
Far greater may she see;
And when she looks for loyalty
From sons, full many a score,
She finds no truer than from us,
The class of '74."

—George H. Barrus, the president of the class association, is busily employed in his profession as expert and consulting steam engineer. He has recently completed an elaborate series of tests on a 500 K. W. Curtis steam turbine for the Old Colony Street Railway Company and the General Electric Company and tests for the Buffalo Forge Company and the Riter-Conly Company of Pittsburg, Pa. He

is also at present inspecting a number of power plants for the United States Rubber Company, of which Colonel Samuel P. Colt, a member of the class association, is president.

1875.

E. A. W. HAMMATT, *Sec.*, 10 Neponset Block, Hyde Park, Mass.

The Tech reunion is over; and, while '75 had a fair number attend, she ought to have had more, especially when one recalls the fact that there are about fifty-two men who have been connected with the class living in or within two hours by train of Boston. I noticed by the card list at headquarters only twelve men had registered as of the class of '75; but, if we include members of the class association who registered in other classes, there was an attendance of twenty-two. Twelve attended the dinner of the classes of '68 to '78 at the Westminster, and ten attended the "Pop" concert, with eight on the harbor excursion. The only long-distance men attending were Goodale from Butte, Mont., and Webster from Philadelphia. On Tuesday, June 7, in room 42, Pierce Building, at 3 P.M., a class meeting was held, at which it was unanimously voted:—

That it is the sense of the class of '75, M. I. T., that all discussion on the question of any connection of any nature between the Massachusetts Institute of Technology and Harvard University is fruitless until a definite proposition, embodying the full terms of such connection, shall be submitted by the Corporation to the alumni for their approval.

Voted, That a copy of this motion be sent to the secretary of the Corporation and to the Association of Class Secretaries.

1878.

LINWOOD O. TOWNE, *Sec.*, Haverhill, Mass.

Reunion Week was symbolized in number of attending '78 men by the phrase often applied to the time we were at the Institute, "the lowest ebb,"—but five members of the class showing up. Those at

the Pop concert were Rich, Rollins, Schwamb, Woolworth, and Towne. At Nantasket the number was diminished by absence of Rich. The valiant quartette had no elaborate stunt to offer, and were forced to show themselves in a modest bow and cheer. The day was saved, however, by the consideration of the recent graduates, who, spying among our number a mechanical genius, thereupon helped out the stunt by adding the cheering conundrum of "What's the matter with Peter?" It needed no precedent when the accustomed answer came full and strong from hundreds of throats shouting the axiomatic response.—'78 is particularly interested in the Eastern war in that our own Takuma Dan, with his active management of the coal mines of Japan, is no mean factor in the struggle. A recent letter to the secretary is especially interesting at this time. In it he says: "Please rest assured of my personal safety, as we are keeping our enemy pretty far from our shores. I deeply appreciate your words of encouragement and sympathy for our people. In such a time as this they go a long way to cheer the spirit not only of the direct recipient, but of the whole nation bent upon a work of such gigantic magnitude. You people know very well how we were forced to take arms. We are proceeding with methods we learned from you; and the success so far attained is, we hope, not unworthy of the teacher. If one examines the actual state of things with calm and unbiassed judgment, he will find the 'yellow peril' is only a shadow of wilful imaginations, the real danger lying in the spread of that strange influence emanating from St. Petersburg." How like Dan this all is, and also how typical of his nation in its modesty and general placing of credit on others! —The secretary, through the courtesy of members of the class, accompanies Professor George H. Barton, of '80, during his summer's conducting of a party on a ten weeks' trip, which includes Niagara, the Falls of Minnehaha, Yellowstone National Park, Columbia River, Hawaiian Islands (a stay of nearly four weeks), and a return by way of the Canadian Rockies. Barton's position on the Hawaiian geological survey for some years in the early '80's makes him an ideal conductor, and a rare trip is prophesied for those going along.

1880.

PROF. GEO. H. BARTON, *Sec.*, Mass. Inst. of Technology, Boston.

It is very gratifying to report that the alumni reunion was productive of good results in our class. For the first time in its history since graduation it met for a class dinner, and also formed a class organization, with William T. Miller, president, and George H. Barton, secretary. Owing to the small number in the class of '80 and its former lack of organization, the class of '79 very kindly extended a cordial invitation to its members to join in its class dinner; and the invitation was accepted by seven,—Almy, Barton, Benedict, Clark, Crowell, Hamilton, and Miller. A very pleasant evening was spent in reminiscences, as some had not been seen for twenty years. Letters of regret were received from many who could not be present. Of those present Almy is president of a mining corporation with headquarters in Boston; Barton is curator of the Teachers' School of Science, Boston, and is about to start a summer school for a trip to Hawaii to study volcanic phenomena, visiting Niagara, Yellowstone Park, the Illecillawaet Glacier, etc., on the way; Benedict is a quiet and staid banker on State Street, Boston, claiming that his life is very uneventful; the formerly slender Clark has become aldermanic in physique, is president of the Jonathan Clark Sons' Construction Company, Chicago, and at present is erecting a large building on Beacon Street, Boston; Crowell, M.D., looks very prosperous, but failed to give much information concerning himself; Hamilton, one of the sewer department engineers, pretends he is so busy he can scarcely look at his classmates; and Miller cordially extends an invitation to all former classmates to call at his piano warerooms on Boylston Street, where they may be sure of a strenuous welcome.—A. N. Brown, professor and librarian at the United States Naval Academy, Annapolis, Md., writes that he is very pleasantly situated there.—C. H. Brown is pastor of a Baptist church at Newport, Vt. He has deserted science entirely, seems happy at the change, and sends cordial greetings to all.—Arthur T. Greenough is reported as hav-

ing died Sept. 18, 1889.—E. C. Potter sends sincerest regrets and good wishes to all, and adds, "Please record my vote as unyieldingly against any scheme by which Tech loses her autonomy or identity."—Almy, Barton, Clark, and Miller attended the Nantasket jubilee, where '80 joined '79 in singing "Das Grab," and where Miller again raced Duff of '81, with the same result as in long bygone days. The "Pops" were enjoyed by the same men, but at the alumni banquet only Almy, Barton, and Clark appeared.

1881.

FRANK E. CAME, *Sec.*, 17 Place d'Armes Hill, Montreal, P.Q.

Theodore Parker is with the New York, New Haven & Hartford Railroad.—Gerry is working for the Massachusetts Highway Commission.—Zimmerman is reported as doing finely at Los Angeles, Cal.—Sam Rindge is one of the firm of Parker, Wilder & Co.—The class had a dinner June 6. Five graduates and seven specials were present. At the big dinner at the Somerset five graduates and four specials made noise enough for twice that number.—Webb Norris has gone to Youngstown, Ohio, to the Republic Rubber Company.

1882.

WALTER B. SNOW, *Sec.*, Russell Avenue, Watertown, Mass.

The class was represented at one or more of the features of the reunion by Darrow, Ely, French, Gooding, Herrick, Mansfield, Munroe, H. F. Ross, W. B. Snow, A. W. Walker, Hall, Warren, Low. and Jenkins.—Clark Carson, the class boy, who expected to enter the Institute last year, has just finished his first year at Purdue University. Poor health made it necessary to keep him near home and give him an easy course.—Manning has given up his work at Washington, Pa., and is now connected with the Wheeler Condenser and Engineering Company at Chicago.—Ayer, whose home is in Portland, Ore., was in Boston just prior to the reunion, and expected to be able to attend.—Thompson is now located at the Winona shops of the Chicago & North-western Railway.

1884.

WILLIAM L. PUFFER, *Sec.*, Mass. Inst. of Technology, Boston.

The reunion brought out a larger gathering of our classmates than any other occasion since the famous graduation day of 1884. The following men were in attendance: Appleton (class marshal), Bennett, Boardman, Bridgeman, Chase, Doane, Gill, Johnson, Prescott, Puffer, Purinton, Rich, C. S. Robinson, T. W. Robinson, Rotch, Ryder, Coburn, Adams, Tyler, Mellen, Fitch. The following ladies were known to have been present: Mrs. Appleton, Mrs. Chase, Mrs. Doane, Mrs. Gill, Mrs. Johnson, Mrs. Puffer, Mrs. Rotch, Mrs. Tyler. There may have been others whose names were not obtained by the secretary. Through the kindness of Rotch the class participated in a most enjoyable excursion to the Blue Hill Observatory at Milton, leaving the Institute at half-past nine on Tuesday. On arriving at the summit of the hill, the observatory was thrown open to us, and the various instruments were pointed out and explained. An attempt was made by Mr. Clayton to fly some kites in honor of the class, but the wind was too light and unsteady for satisfactory results. After the class had become sufficiently familiar with the operation of all instruments to act as experts in meteorology, an adjournment was taken to the residence of Mr. Rotch. On arrival at the house we found Mrs. Rotch waiting to receive us with a lunch which will go down in the annals of '84 as one of the most important events since their graduation. On leaving, a regular '84 cheer was given in honor of Mr. and Mrs. Rotch. The secretary is pleased to state that a number of attempts at group photographs were made by Fitch, but he is unable at present to guarantee any results. Letters were received from the following men, regretting their inability to take part in the reunion: Lull, Weston, Luther, Baldwin, du Pont.

1885.

ELEAZER B. HOMER, Sec., 11 Waterman Street, Providence, R.I.

The '85, '86, and '87 spread was a great success. Many friends dropped in to see us, and the room at the Brunswick was crowded. The dinner with '86 and '87 at the Athletic Club was jolly enough. Perhaps '85 was asleep; but it woke up after the shouting was over, and scored on the class tree illumination. [How about the class stunts also? Did you see any fog on the angels?] Ames, Bartlett, Brown, Dodge, Eaton, Fiske, Homer, Miss Jones, F. M. Kimball, J. L. Kimball, Litchfield, Little, McKim, D. MacRae, Martin, Merrill, Morss, Nute, Osgood, Parsons, Plaisted, Rawson, Steele, Spaulding, Talbot, were present at the events of the June reunion. At the annual meeting held on June 7 Charles R. Richards was elected president and Isaac W. Litchfield secretary and treasurer for the ensuing year. Next year we are twenty years old, so be prepared for a special reunion. If you did not receive a copy of the *Hustler*, send to Litchfield for one.—While awaiting new government appropriations, Eaton's address will be Haverhill, Mass., instead of Mobile, Ala.—Litchfield is again located in Boston, Lamson's Consolidated Store Service Company, 161 Devonshire Street. Twenty years of Western air have not changed his smile and grip.—Dewson's letter of regret that he could not be present at the reunion included the following summary:—

129 GORDON STREET, EDGEWOOD PARK, PA.,
June 1, 1904.

My dear Homer,— . . . You may be interested to know something of what I have been doing during the past few years. In the spring of '97 I accepted the position of chief engineer of the Standard Air Brake Company of New York, manufacturers of street railway brakes. June 2, '98, I went to Europe in the interest of this company, and returned the 1st of April, '99, having made my headquarters in Berlin, with trips to England, Paris, and through Germany and Switzerland and Austria to Vienna. . . . In July, 1899, I returned to Europe, this time taking my family; and our three children attended a German school in Berlin until March, 1900, when we moved to Paris, and kept house in Asnières. With

the exception of a number of trips through Central Europe, north of Milan and Genoa, I was in Paris fifteen months, having sold over four hundred brake equipments, supervised their installation, and instructed the engineers of our English, French, and German representatives. On one of my trips I visited Nimes and Arles, and was particularly interested in looking up the architectural features which you described in the REVIEW. . . . We returned in November, 1900, and the following spring our company was bought out by the Westinghouse Air Brake Company; and I moved to Pittsburg, where I seem to be settled "during good behavior." The Westinghouse Traction Brake Company handles all the brake business for electrically propelled railroads, and I continued in my old position with them. Should any '85 man chance to wander out into the wilds of Allegheny County, I hope he will look me up, either at Wilmerding or my home, as above. Give my best regards to all the boys, and tell them I am betting on '85 for the funniest stunt, especially since our Ike, the only Ike, is back at the Hub, the centre of God's country.

Fraternally yours,

E. H. DEWSON.

1886.

PROF. ARTHUR G. ROBBINS, *Sec.*, Mass. Inst. of Technology, Boston.

Twenty-six members of the class joined with the classes of '85 and '87 in entertaining relatives and friends at the Brunswick on the afternoon of Tuesday, June 7. In the evening the same classes met for dinner at the Boston Athletic Association,—a dinner memorable for the enthusiastic expression of loyalty to Alma Mater and of fraternal good will. May the same classes meet with undiminished numbers and equal enthusiasm at many future reunions. From the dinner the classes marched in a body to the "Pop."—Tech men who stopped at Niagara on their way to Boston were emphatic in their expression of appreciation of the courtesy of Ricker, who showed them the wonders of Niagara Gorge from the Gorge Railway, of which he is chief engineer.

1887.

EDWARD G. THOMAS, Sec., 4 State Street, Boston.

Frederic Field Bullard died at the Boston City Hospital on Friday night, June 24, 1904, of pneumonia. In spite of recent illness, from which he had not fully recovered, Bullard undertook and carried to most successful completion the musical programme of the Tech reunion. The extent of the task which was necessary to orchestrate the Tech songs for the many instruments of the Symphony Orchestra and the brass band was appreciated only by few, while a further burden was added by the necessary rehearsals. Knowing, as he surely did, that he undertook the task at some risk, he gave ungrudgingly of his strength to the success of the reunion, the culmination of the college spirit of his Alma Mater, for which he had worked so long with alumnus and undergraduate. While he seemed none the worse at the time, he was taken suddenly ill at Boston only four days before his death. He was taken to the City Hospital, where his case was recognized as critical; and all that loving friends and the best of care could do was to stay its progress for a short space. The funeral services were held in the Central Congregational Church, Boston, Tuesday afternoon, June 28, and were largely attended by Tech men and his many social and musical friends. Cameron, Thomas, Young, and Sprague, of '87, acted as ushers. The service consisted of Scripture reading by Rev. J. H. Dennison and the singing, by the Central Church choir, of "Light and Life Immortal" and "There is no Night in Heaven," both Bullard's compositions.

The casket was almost hidden by the great masses of flowers, among which were tributes from '87, from the Faculty, and the Tech Reunion Committee. Bullard leaves a widow and a boy five years of age.

—Professor S. P. Mulliken has just published the first volume of a large work, entitled "A Method for the Identification of Pure

"Organic Compounds" by a systematic analytical procedure based on physical properties and chemical reactions, and the present volume contains classified description of about 2,300 of the more important compounds of carbon with hydrogen and with hydrogen and oxygen.—Henry J. Conant has just returned from a two months' trip to Italy and Sicily.—Professor George F. Sever was appointed acting dean of the Faculty of Applied Science at the annual commencement of Columbia University, and presented the degrees to those graduating in mining, civil, electrical, and mechanical engineering, metallurgy, and chemistry.—Lyman Farwell reports the arrival of a boy in his family about two months ago.—Solomon Sturges will sail for Europe late in the summer for a trip of a few weeks, returning with Mrs. Sturges, who has been abroad for several months.—Henry Souther's family will pass the summer as usual at Bass Rocks, Gloucester.—H. C. Spaulding has been made assistant sales manager of the Triumph Electric Company of Cincinnati, of which James C. Hobart is president and general manager. He will be temporarily located in Baltimore.

THE REUNION

'87 began its own part of the reunion by a reception to the members and ladies given by Mr. and Mrs. Taintor at their Cambridge home on Monday afternoon at four o'clock. The house, which Taintor has recently built, is of old colonial architecture and most comfortable style, and particularly to be noticed were the large old-fashioned fireplaces in the parlor and dining-room. Mrs. Taintor was assisted in receiving her guests and in serving refreshments and punch by Mrs. Andrews, Mrs. Burke, and Mrs. Bradford. There was more or less discussion of the Tech-Harvard merger. Those who were in attendance were Mr. and Mrs. Guy Kirkham, Mr. and Mrs. B. C. Lane, Mr. and Mrs. S. C. Hathaway, Mr. and Mrs. O. S. Hussey, Mr. and Mrs. H. F. Bryant, Mrs. H. C. Spaulding, Mr. T. W. Sprague and Miss Sprague, Messrs. Sturges, W. B. Blake, Carter, Coburn, Crosby, Gay, Frink, Douglas, Gulliver, Gleason, and E. G. Thomas.

Tuesday morning we assembled at the Technology Club for an automobile run, Draper, Cameron, and Souther with gasoline machines, and Sprague and Thomas with Stanley steamers. Souther burst a tire just at starting, so we left him with Hussey for repairs. Underhill, Lane, Kirkham, Blake, Young, Hathaway, Sturges, Douglas, Carter, Sears, Burgess, and Carney filled the other machines; and, with a large '87 flag trailing from Draper's tonneau, we started for Norumbega Park via Brookline, Newton, Waltham, and Weston. One of the steam machines led the way at a pace which bent the speed law a little now and then; and, as the rain of the previous night had laid the dust, we were able to keep close together without discomfort, and make a more united excursion than is generally possible with automobiles. After a run of eighteen miles we reached Norumbega Park at noon, where Souther and Hussey awaited us. We ordered lunch, and, while awaiting its serving, walked over the park grounds, fed the monkeys and bears, and talked over the Tech-Harvard merger. After lunch the autos were again started, and with Draper in the lead we came to town over the boulevard. Apparently, Draper has not heard of the speed law; but we all hung to him, and landed in town together after a most enjoyable morning.

At three o'clock Tuesday afternoon we joined with '85 and '86 in a spread at the Brunswick, which brought together a large number of the men of the three classes and many ladies, and also afforded a most pleasant interchange of visits with the classes from '79 to '82 and '93, who also entertained near us. The general topic of conversation was the Tech-Harvard merger.

At six o'clock '85, '86, and '87 met together again, this time at the Boston Athletic Club for dinner. It was served in the dining-room of the new part of the club-house, which was filled to overflowing by the large number present. We had as guest Mr. H. K. Burrison of the instructing staff of the Institute, and it was a very great pleasure to us all to meet one to whom every member of the classes is indebted for our earliest direction toward accuracy and care. The following forty '87 men were present: Underhill, Lane, Kirkham, Blake, Cameron, Young, Souther, Hussey, Hathaway,

Sturges, Douglas, Thomas, Sprague, Carter, Sears, Burgess, Carney, Draper, Todd, Coburn, Bryant, Gulliver, Gleason, W. A. Whitney, Moody, Livermore, R. E. Curtis, Hildreth, Crosby, Proctor, Mulliken, Bullard, Wakefield, Taintor, Cobb, Very, Gay, Tripp, Cady, and Nichols.

Spaulding, '85, entertained us with a bone solo, and there are none to beat him. C. C. Pierce told a good story about a very "fuggy" time on the Maine coast in a very "fuggy" voice; and Burgess delivered his famous song, "Do you think I am too Small?" and then sprung on us this new song to the tune of "John Brown's Body":—

"You can't make crimson out of cardinal and gray,
While the Tech goes marching on."

CHORUS.

"We don't care a d—— for Harvard,
While the Tech goes marching on."

As the Tech-Harvard merger was by this time a *seething* topic, we learned this song very promptly, and continued to sing it at frequent intervals. After the dinner was served, Everett Morss, '85, H. E. Clifford, '86, and Henry Souther, '87, made a few remarks in welcome to the other classes. A. D. Little, '85, made an earnest plea, asking for a suspension of judgment on the merger question until the details of the arrangement were made public. He argued that, as loyal Institute men, we should not take the position that under no conditions could the McKay money be used for furthering the Institute ideas, and we should work for one grand technical school rather than to allow Harvard to build a competitor of the Institute.

Reply was made by E. G. Thomas, pointing out that instead of remaining inactive and allowing the advocates of the alliance a free hand to perfect arrangements, which the alumni might or might not have an opportunity to negative, it was most necessary for the alumni to express their sentiments promptly and strongly, if the independence of the Institute is to be preserved, as the McKay will definitely places the management of the fund in the hands of

the president and fellows of Harvard College, and states that the bequest is a gift to Harvard College, so that any alliance based upon the use of the McKay fund by Tech must mean the merging to some extent of its identity in Harvard.

Then we adjourned to the Pop, marching in preceded by our blue and orange banner, and singing, "You can't make crimson out of cardinal and gray." There can be little added to the description of the Pop which is given in the preceding pages, but we certainly were enthusiastic and in good voice for cheering and for singing, "You can't make crimson out of cardinal and gray"; and we made it plain that we were proud of our classmate Bullard, whose earnest work for the success of the musical programs of the reunion no one could appreciate more than we did, knowing that it was accomplished in spite of lack of health and strength. Just to let the audience know we were there, we threw from the top balcony several thousand flyers, reading thus:—

Who does "The Right Thing as usual"?

To what class does the Glee Club owe its origin?

Technique,—Freshmen cry for it. Everybody wants it. Who started it?

Who organized the first class society?

The *Technology Quarterly* was started by a man from

What Freshmen had for their President a man with *Whiskers*?

Which class leads in *Walker Memorial Subscriptions*?

'87

At the excursion we turned out nearly forty men and many ladies. We duly performed a short but remarkable military drill as a stunt; and we sent off our fire balloon among the first, while it also had the remarkable record of coming down first. At the Somerset banquet there were twenty-eight of us, still in good voice for cheering. Nutter and Richardson were added to our lists on Wednesday.

It was gratifying to the secretary to note during the reunion that nearly all of the class who were inclined to the belief that it was wise to wait on the merger question until the presentation of a definite proposition were made to see during the reunion, by the

arguments presented by their classmates and others, the necessity of earnest and united action to offset any movement toward an affiliation with Harvard based on a bargain for the McKay millions. At the end of the reunion '87 was practically a unit in opposition to any arrangement involving the slightest loss of independence by the Institute.

1888.

WILLIAM G. SNOW, *Sec., 245 No. Broad Street, Philadelphia, Pa.*

George C. Scales, consulting engineer of San Juan, P.R., writes that he has been in business for himself for nearly two years as architect, engineer, and builder, having designed and built houses, a country club house, a hospital, schools, etc., and now has under way sewers, water supply, and roads. He was pleased to receive an unexpected visit from William H. Blood, Jr., who was in Ponce early this year in the interest of Stone & Webster, who are operating an electric railway and lighting plant there. Scales expects to come north in the fall.—James L. Belser is with the Trimount Manufacturing Company, Roxbury District, Boston, Mass.—'88 made a good showing at the Tech reunion. First on the list of events was the class spread at the Vendome on June 7, where members met and entertained friends and guests from other classes. Immediately following this gathering came the class dinner, attended by thirty members, the largest number present at any dinner since the class was graduated. At the business meeting following Alfred H. Sawyer was re-elected president for a sixth term in that office. A vote was passed expressing the belief that the alumni should take no hasty action in regard to a Technology-Harvard affiliation, but that they should wait until they have a definite proposition for discussion. Our forces were augmented on our arrival at the "Pop" concert, and we marched in thirty-six strong, and contributed our full quota to the enthusiasm rampant. On the harbor excursion we mustered twenty-seven men, which provided ample material for our class stunt, consisting of a reproduction of the famous Tech-Dartmouth game in the fall of '87, when

we won the championship. The game at Nantasket was followed by a representation of the torch-light parade that took place in '87 to celebrate the victory, when the Tech boys marched through the streets of Boston arrayed in night-shirts and "plug" hats. The championship banner was secured for the occasion, and was carried at the head of the line. Our only regret was that Herrick of football fame was not with us. The climax of the reunion was reached at the alumni dinner at the Somerset, at which nineteen '88 men were present.—William A. Hall, of New York, was present at the '88 dinner, it being the first one he has been able to attend since undergraduate days.—Several former '88 men participated in '89's celebration.—Walter E. Silsbee is located at 71 Ames Building, Boston.—Owing to the unavoidable absence of F. L. Locke, '86, B. R. T. Collins acted as chief marshal on excursion day of the Tech reunion.

1889.

PROF. F. A. LAWS, *Sec., Mass. Inst. of Technology, Boston.*

FIFTEENTH ANNIVERSARY

The class of '89 is recovering from a three days' dip into the strenuous life, for the members, besides taking part in the great Tech reunion, observed in a fitting manner the fifteenth anniversary of their graduation. Early in March the matter of an '89 reunion was discussed at an informal meeting held at the Technology Club, and the following committee was designated to take charge of the affair and insure its success: W. B. Thurber, J. P. B. Fiske, Hollis French, F. R. Hart, F. W. Hobbs, G. C. Wales, Jasper Whiting, W. H. Kilham, secretary. The committee decided on a general call from Box 89. The response was most gratifying, and showed conclusively that the old watchword had not been forgotten. During the celebrations, headquarters were provided at the Brunswick, and an attendant placed in charge, who transacted the necessary business. On Monday, June 6, the following members of the class were on hand to welcome those from a distance: Alley, Beals, Bradley, Hunt, Johnson, Kuhn-

hardt, Loring, Laws, A. E. Norris, Peirce, and Smith. The following names appear on the register: Davis, Beals, Kilham, Laws, Ayer, Pike, A. E. Norris, Hobbs, Mildram, Kuhnhardt, W. S. Johnson, Truesdale, Hollis, Lewis, Cutter, Fiske, Loring, Wales, Thorp, Bradley, E. E. Pierce, L. E. Johnson, Hunt, Whiting, Smith, Alley, Thurber, Boutwell, Bridges, Hart. After greetings, reminiscences, and reports of the progress of the past fifteen years, the question which is uppermost in the mind of every Tech man—the proposed merger with Harvard—was most freely discussed. The discussion brought out all shades of opinion as to the best method of approaching this most vital question, but all agreed that the outcome should be such that the distinctive characteristics which have given the Institute its great name be preserved. In the evening the class to the number of thirty-four assembled at the University Club for the dinner. Thurber was the presiding genius, and the following members took seats at the table: Thurber, Fiske, Estabrook, Bridges, A. E. Norris, Thorp, Cutter, Laws, Whiting, Ayer, Smith, Howard, Marsh, Pike, E. V. French, Truesdale, Hobbs, Kilham, Hawkins, Kuhnhardt, Alley, E. E. Pierce, Mildram, L. E. Johnson, Hunt, Wales, Davis, Beals, W. S. Johnson, Loring, Hollis, Underhill, Lewis, H. French. To complete the enjoyment of the hour, the dulcet strains of "Bedelia" and other classic airs were gently wafted to the ears of the assembly, the talent being furnished by the celebrated musical bureau of J. Whiting. The committee thought it best not to arrange for formal speech-making. During the evening the president proposed the following toasts: "To the Massachusetts Institute of Technology." "To the class of '89." "To the memory of those who are no longer with us." At the conclusion of the dinner the president called on Professor Laws of the Institute to give some account of the changes wrought at Tech during the last fifteen years. He outlined briefly the various changes in the instructing staff and the growth in building and equipment as well as the more important course changes which have taken place since '89 graduated. The secretary read letters of regret from F. L. Dame, H. W. Blake, G. M. Basford, Frank H. Cilley, and Miss Caroline A. Woodman.

Mr. Walter H. Kilham, who has for the last five years discharged the important duties of class secretary in such a satisfactory manner, asked that he be relieved from further service; and Professor F. A. Laws, of the Institute, was elected to fill the vacancy. After this all gathered around the piano, and had an old-fashioned sing under the leadership of Pierce and Marsh; and it was once again proved that, when '89 men wish to enjoy themselves, there is nothing like the inspiration derived from the compositions of that distinguished lyrlist, G. C. Wales. We note, in passing, that Marsh was in excellent form for the "Bullfrog on the Bank," as his performance showed. To keep this royal good time in mind, the committee provided souvenir plates for all present, inscribed thus:—

M. I. T.

1889.

CLASS DINNER

June, 1904.

We have to thank Hart for the suggestion which brought about this novel feature. All present voted this to have been the most successful of our class dinners, and the committee were sincerely congratulated on the success of their efforts. The hour of adjournment was late, but not so late as to prevent attendance at the reception at the Museum of Fine Arts, where many were glad to pay their respects to that good friend of the Institute, Mrs. Walker. On Tuesday, at noon, the class again met, this time at the Massachusetts Automobile Club, where a spread was provided. The secretary called the company to order, and a vote of thanks was passed in acknowledgment of the good offices of Messrs. Alley and Howard, members of the Automobile Club, in procuring the use of the club for the spread. The indebtedness of the class to the executive committee for their care in arranging the celebration and to the retiring secretary, Mr. Kilham, was acknowledged by suitable votes. The proposed merger with Harvard was then taken up and freely discussed. It was finally decided that, in the absence of any details concerning the matter, it was best to defer action. After adjournment there was a pleasant drive to the Country Club, where a most enjoyable afternoon was spent.

Symphony Hall never contained a more enthusiastic gathering than on Tech night, June 7. The occasion was one which can never be forgotten, and was a revelation to those who had assumed that there was no such thing as Tech spirit, and that the alumni of the Institute were a precious lot of grinds with powers of enjoyment stunted by early training. '89 easily sustained its reputation by vociferous contributions to the general ebullition. To Hobbs must be given the credit for keeping the object of the gathering ever before the eyes of the assembly, for it was he who contributed the great banner inscribed "TECHNOLOGY." The greatest compliment which could possibly be paid to the committee having in charge the great alumni reunion was the sustained interest in all the events, and '89 showed her appreciation of the field-day arrangements by sending a large delegation; and all appreciated the opportunity of meeting not only classmates, but their wives as well, the more so as in many cases this was the first opportunity for so doing. The sports at the Atlantic House were greatly enjoyed, and it was freely conceded by all unprejudiced judges that '89 furnished the most rapid stunt on the beach. The climax of the celebration was the great alumni dinner at the Somerset, where '89 was represented by the following members: Hobbs, Whiting, W. S. Johnson, Boutwell, Loring, Thurber, Hart, Pike, Smith, L. E. Johnson, Lewis, Truesdale, Laws, A. E. Norris, Hollis, Davis. That our anniversary committee were enabled to carry to completion their extended plans was due to the loyal support accorded them by the class, and the committee deeply appreciated the interest shown by all to have a celebration adequate to the event.

In reviewing the three days' celebration, the most impressing single event was the procession at Nantasket. It really was a master stroke to thus mass the alumni, so that all could appreciate its strength. One could not but recall the victories of the past and hope for still greater in the future, and the comment which passed from lip to lip was, "'89 is getting pretty well to the front."

Theodore C. Pietsch recently resigned his position in the supervising architect's office to form a partnership with Otto C.

Simonson in Baltimore.—Edward A. Crane has left the supervising architect's office to engage in business in Philadelphia with John R. Rankin and Mr. Kellogg, under the firm name of Rankin, Kellogg & Crane. They have been appointed the architects for the new building for the Department of Agriculture.—George C. Whipple has formed a partnership with Mr. Allen Hazen under the firm name of Hazen & Whipple, consulting engineers, St. Paul Building, 220 Broadway, New York, N.Y.

1890.

GEORGE L. GILMORE, *Sec.*, Lexington, Mass.

A. H. Rogers is temporarily down on the English, as, owing to their failure to deliver some important machinery in the line of gas engines, he was unable to leave the mining plant in Mexico, where he is general manager, to attend the June reunion, and could be with us only in spirit.—Professor Gary N. Calkins sailed from Boston for the other side on the "Romanic," May 14.—F. A. McDonald, whose whereabouts had been among the missing, has been located in Pittsburg, Pa., at 1225 Carnegie Building, where he is filling the important position of chief engineer to the National Mining Company and River Coal Company.—C. W. Sherman now has another future Tech man in his family in Richard Winslow Sherman, born May 22.—Professor W. Z. Ripley and Mrs. Ripley sailed for Europe June 8.—George A. Packard sailed June 10 on a two months' trip to South-eastern Alaska.—Samuel A. Moss, of Montpelier, Vt., is now engaged in mining, and has been West this spring, so he could not connect for the reunion.—Harry L. Noyes seems to find plenty of occupation at Niagara Falls, N.Y., where he is in business as a consulting engineer. Harry is bringing up a happy family of coeds, consisting of three fair maids, ranging in age from five years down to five months. Not content with such home attractions, he has gone into politics, and is now president of the common council, in which position he is boss of the roost, and can talk unchecked.—Joe Baker has given up his

Boston office as a consulting engineer, and is now at Schenectady, N.Y., in the publication bureau of the General Electric Company.—Cyrus C. Babb is in Malta, Mont.—During the alumni reunion the following members of '90 were present at one or more of the gatherings: Ayers, Blood, Bragg, Burley, Churchill, Cook, Delano, DeWolf, Dwelley, Ellis, Gilmore, Goodwin, Greenlaw, Hayden, Hills, Hollis, Loring, Machado, McDonald, Mossman, A. E. Norris, J. K. Noyes, W. Z. Ripley, Royce, Seeler, Sherman, Simpson, Spaulding, Stearns, Tripp, White, and Woodman. The class dinner was held at the University Club, Monday evening, June 6. In the absence of Charlie Hayden, our president, Billy Ripley, filled the position of toastmaster in his usual successful manner. The burning question of the hour was of course discussed, and '90 placed itself on record by passing the following vote:—

It is the sense of the class of '90 that the Faculty of the Institute, as the custodian of the educational ideal and policy, should be consulted by the Corporation before any final action tending toward the affiliation of the Institute with Harvard University be taken.

A copy of the above, signed by the class secretary, was duly forwarded to Dr. Williams, the Secretary of the Corporation. After the dinner the class attended the reception at the Art Museum. Tuesday afternoon '90 held a spread at the Brunswick that was attended by many of the members, several being accompanied by ladies. We were visited and cheered by a number of the other classes, and in return introduced them to our punch, prepared by Landlord Barnes. The class attended the "Pop" with colors flying, and as a result of the cheering scarcely one of the boys has yet recovered the full use of his vocal organs. On the harbor trip the flag of '90 was wafted to the breezes in the bow of the boat. For a stunt '90 gave a cake-walk, Charlie Hayden heading the procession, carrying the cake and wearing short trousers, with a sign on his back reading, "The Way I came to Tech." Needless to say, it was appreciated by '89. At the banquet at the Somerset '90 filled two tables, fifteen of the class being present.

1891.

H. C. FORBES, *Sec.*, 4 State Street, Boston, Mass.

Class of '91 introduced an innovation this year by inviting the ladies to attend the thirteenth annual class dinner. The dinner was held at the Oakley Club on Tuesday, June 7, the second day of the Tech reunion. To the presence of the ladies can be attributed undoubtedly the success of the dinner, both in enjoyableness and in attendance. The numbers present at the class dinner since the records have been kept have been: 1897, 27; 1898, 20; 1899, 26; 1900, 21; 1901, decennial, 29; 1902, 18; 1903, 17; 1904, 41 members and 16 guests, total, 57. Arthur F. Shattuck came from the greatest distance,—from Detroit. James Swan came from New Jersey; from New York State, Mrs. Annie White Carpenter, Mr. and Mrs. Aiken, Mr. and Mrs. French, Mr. and Mrs. Leeming, and F. Clouston Moore; from Connecticut, Mr. and Mrs. Bassett and F. Campbell Moore; from New Hampshire, Carleton A. Read. The others present coming from nearer Boston were Mr. and Mrs. Bird, Mr. and Mrs. Jeremiah Campbell, Mr. and Mrs. Capen, Mr. and Mrs. Douglas, Mr. and Mrs. Forbes, Mr. and Mrs. Garrison, Mr. and Mrs. Goodwin, Mr. and Mrs. Francis C. Holmes, Mr. and Mrs. Arthur M. Mansfield, Mr. and Mrs. Palmer, Mr. and Mrs. Spooner, Mr. and Mrs. Tyler, Messrs. Alley, Bowen, G. A. Campbell, Chase, Dana, Dart, Joshua Hale, W. F. Keene, Kimball, Lawrence, J. W. Pierce, Richardson, Tappan, J. G. Thompson, Trowbridge, Walker, and Young. After the dinner the class went to Symphony Hall by special car, joining the alumni of the other classes at the "Pop" concert,—Tech Night. The balcony was reserved for the ladies.—Warren F. Knowlton is the proprietor of the summer hotel "Blynman," which is situated at Magnolia, on the north shore of Massachusetts Bay, about twenty-seven miles from Boston. The hotel and cottages connected with it accommodate one hundred and fifty guests. This is obviously the place for all Institute men to "cool off" during the hot weather.—Herbert C. Daggett is now located in Boston, as the New England manager and engineer for

the F. Morgan Smith Company of York, Pa., manufacturing water wheels, power transmitting machinery, boilers, and flume work.—Guy E. Mitchell was the superintendent of construction and equipment of the Berkshire Street Railway, and is at present in Boston as mechanical engineer with C. K. Stearns.—Morris Knowles is the chief engineer in charge of the bureau of filtration of the water-works of Pittsburg, Pa. He has recently published a paper entitled the "History of Lawrence (Mass.) Filter."—Arthur E. Hatch is the vice-president and general manager of the Bay State Dredging Company, with office at 19 High Street, Boston, Mass.—Albert L. Clough has recently published two papers, "What an Engineer should know about Electricity" and "Plain Facts about the Automobile." He is at present consulting electrical and automobile engineer and the technical representative of the "Horseless Age" of New York City.—Thomas M. Brooks is now the chief engineer of the International Harvester Company of Chicago.—Theodore Spencer is the general manager of the Bell Telephone Company of Philadelphia, covering both the service in the city and in the surrounding territory.—Harry W. Jordan has been recently located in Birmingham, Ala., with the Semet-Solvay Company. He has now gone back again to Syracuse, N.Y., as manager of the carbolic acid department of the same company.—Henry T. Weed is the head of the science department of the Manual Training School of Brooklyn, N.Y.—Alexander W. Moseley has been made professor of applied mechanics at the Lewis Institute of Chicago.—Francis C. Holmes is assistant treasurer of the Plymouth Cordage Company, North Plymouth, Mass.—Henry H. Sykes is the general superintendent of the Southern New England Telephone Company, with headquarters at New Haven, Conn.—Ernest A. Hersam is associate professor of metallurgy in the University of California.—Füger writes the following:—

I am sorry I am not near enough to Boston to be with you all June 7, 8, and 9. I suppose my regiment will be here for the next year, and then return to the Philippine Islands for a tour of two or three years. I have seen very few of the men since graduation. In Chicago, in 1893, I met quite a number, however. All my service in the army (since Aug. 1, 1891)

has been with the Thirteenth Infantry, and to-day I am commanding the company I was second lieutenant of in 1891. I have had command of this company since Feb. 2, 1901. In 1898 I participated in the expedition against Santiago, Cuba, my regiment being in Wykoff's Brigade of Kent's Division.

From November, 1899, to January, 1902, we were in Northern Luzon, Philippine Islands, engaged in destroying the insurgent forces and establishing order in the various towns. From January, 1902, till June, 1902, we did duty in Manila, during the cholera epidemic. One of our duties was guarding Aguinaldo.

Since July 19, 1902, the regiment has been on duty in San Francisco Harbor.

I am looking forward to coming to Tech some day as military instructor.

—George K. Hooper writes the following:—

With reference to completing the record, I would say that, after starting my independent career in Boston, I began to get a large amount of work in the vicinity of New York, so much, in fact, that a New York office was necessary to me. Events shortly so shaped themselves that I spent all of my time in my New York office, and little or none at Boston, so on the 1st of January, 1903, I closed up the Boston office, and made the New York office my headquarters at 1168 Bowling Green Building, No. 11 Broadway. The volume of work coming to me made it necessary for me to secure larger quarters very shortly, so that on May 1, 1903, I moved to Rooms 1103-1104 and 1105 in the same building, these last offices being my headquarters.

Temporarily, in order to handle what work I have had, it has been necessary for me to take in other space, and so I have had, for some little time past, Room 1119 in the same building.

Since starting an independent career, I have had the remodelling of a part of the plant of the Farrell Foundry & Machine Company at Ansonia, Conn., before that was finished taking up the remodelling of the plant of Milliken Brothers, who are large structural engineers here in New York. In addition to redesigning much of their machinery at their old plant, I have designed and superintended the construction of a large new plant for them at Staten Island, devoted to the construction of bridge and structural work, this being now one of the large structural plants in the country, with a capacity of about 100,000 tons per year.

Many of the tools are of special design, the buildings were all of special

design, and the matters of sewerage, power, insurance, lighting, etc., all were designed by me.

I also designed for these people a small structural shop for South Africa, which is now in operation there, and by deputy appraised for them a large rolling mill and steel plant in Belgium.

Another large plant with which I have had to do is that of the Eaton, Cole & Burnham Company at Bridgeport, Conn. This consisted of taking a going plant and developing it along very broad lines for manufacturing large quantities of pipe-fittings and valves, with a total production of 300 and 400 tons of iron per day, and about 25 to 30 tons of brass fittings, besides which there are included a shop for pipe bending and assembling and all of the necessary storage and executive buildings.

I have built for these people and am just finishing up buildings to the value of about \$700,000, on which we have received many compliments, the Boston Manufacturers' Mutual Fire Insurance Company, through their vice-president, Jos. P. Gray, who is an old Institute man, having paid me the compliment of saying the plant is above criticism. On this plant I also handled everything, taking the bare ground and putting upon it a complete and going manufacturing plant, including sewerage, water, power, lighting, executive buildings, railroads, roads, etc., the whole plant representing an expenditure of well over one million dollars. The third plant which I have handled, under rather unique conditions, is that of the Watson-Stillman Company, manufacturers of hydraulic machinery, formerly located at 210 East Forty-third Street, this city. Acting with my advice, they bought the plant of the Jackson Architectural Iron Works at Aldene, N.J., which is very conveniently located on the Baltimore & Ohio Railroad, the New Jersey Central Railroad, and the Lehigh Valley Railroad, and have thoroughly remodelled the shop of the Jackson Company (which was about two years old) and built four other buildings on the same premises, this work including also the necessary drainage, sewerage disposal, etc. The work on this particular plant was rather unique because having a complete outfit of structural tools. I organized and not only designed, but actually built all of the buildings myself, besides remodelling the main shop, thus doing away with all interference with trades-unions.

Mr. Bryden of '91 came to me from the New England Structural Company to have actual charge and to superintend all of this work.

Besides the above-mentioned plants, I have reported upon the cost reduction in the plants of Pierce, Butler & Pierce, of Syracuse, N.Y.; the

Manufacturers' Sprinkler Company of Syracuse, N.Y., designing for them considerable special machinery; and the Frick Company of Waynesboro, Pa., doing the class work of which is known as "production engineering," in which I feel myself to be one of the pioneers, although more is, perhaps, heard of the firms of Dodge & Day, Gunn & Richards, who spend more money in advertising than do I. I have also been called upon to appraise the Passaic Steel Company of Paterson, N.J., on the occasion of its being offered for sale two years ago, and have given much advice at one time and another on smaller subjects.

My organization has grown from my independent effort in 1901-02 to a permanent organization of ten people, which has at times been expanded to sixteen, as circumstances made such expansion necessary.

I have Marcy, '92, as one of my right-hand men, in addition to Bryden, as above mentioned.

Altogether, I think that the beginning of an independent career, while it was undertaken with considerable hesitancy, has been entirely justified by the results; and while at the present moment we are feeling, although not seriously, the prevailing dulness and indecision of the business world, prospects are bright for additional work as soon as the situation clears.

—Harry H. Young is spending the summer abroad with his wife and two children.

1892.

PROF. WILLIAM A. JOHNSTON, *Sec.*, Mass. Inst. of Technology,
Boston.

The following members of the class registered at the general headquarters during the reunion: Bassett, Bourne, Braman, Burbank, H. A. Burnham, C. H. Chase, Curtin, Derr, Eldridge, Fuller, Hall, Harwood, Heywood, Holmes, Hutchinson, Jacobs, Johnston, Locke, Manley, Mansfield, Matthews, Metcalf, Moore, Newkirk, Park, Pierce, Pope, Potter, Robinson, Sargent, Seeler, Skinner, Spaulding, Sweetser, Tucker, Vining, C. F. Wallace, Warren, Wendell, Westcott, Miss Annetta F. Armes, Miss Margaret E. Dodd, Mrs. Mary Lovering Holman, Miss Lois L. Howe, Miss Marie A. Molineux. The class maintained headquarters in Hotel Brunswick on Tuesday from 2 P.M. to 6 P.M., and a large number of '92

men took advantage of this opportunity of meeting classmates. The class dinner, held at the Copley Square Hotel, was a great success. The following thirty-seven men were present: Beal, Braman, Bourne, Burbank, H. A. Burnham, C. H. Chase, Curtin, C. E. Davis, Dean, Derr, Eldridge, Fuller, Hall, Heywood, Hutchinson, Ingraham, Johnston, Locke, Manley, Mansfield, W. A. Marcy, Metcalf, Newkirk, Park, Pierce, Pope, Potter, Robinson, Sweetser, Tidd, Tucker, Vining, Wales, C. F. Wallace, Warren, Wendell, Westcott. After an excellent dinner a short business meeting was held, and the following officers appointed for the ensuing year: president, Leonard Metcalf; first vice-president, John A. Curtin; second vice-president, J. Scott Parrish; secretary-treasurer, William A. Johnston; assistant secretary-treasurer, Lewis P. Cody. The above officers constitute the executive committee. George V. Wendell was appointed marshal for the exercises at Nantasket Beach. A discussion of the question of union between the Institute and Harvard University was then participated in by several of the members of the class. The discussion was spirited, but a disposition was shown to consider the question in an impartial manner. The following motion was carried with three dissenting voices, "It is the sense of the class of '92 that the absolute independence of the Massachusetts Institute of Technology should be maintained." An adjournment was made to the "Pop" concert at Symphony Hall, where the remainder of the evening was spent in a jolly good time. Twenty-six members of the class participated in the harbor excursion to Nantasket, and enjoyed the day. At the banquet at Hotel Somerset the following men were present: Braman, Curtis, C. E. Davis, Derr, Fuller, Hall, Heywood, Johnston, Mansfield, Metcalf, Newkirk, Park, Robinson, Sweetser, Tucker, Wales, C. F. Wallace, Wendell. The Rackerty-whack "class cheer" was given with good effect, and several times during the evening the cheering done by '92 produced great enthusiasm. It was the unanimous opinion of all the members of the class present at the reunion that the reunion was a great and glorious success.

1893.

FREDERIC H. FAY, *Sec.*, 60 City Hall, Boston, Mass.

The annual meeting and dinner of the class was held at the Brunswick on the afternoon and evening of Tuesday, June 7. During the late afternoon the headquarters were well filled with '93 men. Numerous representatives of other classes dropped in, and many pleasant acquaintances were made. Visits to other class spreads in the same hotel were also made, and among these one to '98, who last year joined with '93 in the inauguration of the custom of having spreads at graduation, will perhaps be recalled most vividly by many of the class. At the annual meeting the following officers were elected to serve for the coming year: president, H. N. Dawes; first vice-president, L. W. Pickert; second vice-president, H. A. Morss; secretary-treasurer, F. H. Fay; assistant-secretary, C. M. Spofford. This resolution was passed by a vote of 24 to 15:—

Resolved, That the class of '93 is opposed to any plan of combination with Harvard University which will threaten in any way the absolute independence of the Institute.

At 6.30 the class sat down to dinner with two guests, Dr. Pritchett, honorary member, and Mr. Buffum, Yale, '77. The following members were present: Barnes, Bemis, Biscoe, Blood, S. A. Breed, Bremer, Bryant, Burke, E. B. Carney, W. W. Carter, Codman, Cook, Crosby, N. P. Cutler, Dawes, Densmore, F. N. Dillon, W. F. Evans, W. E. Evans, Fay, W. S. Forbes, Glidden, James, Kenison, Keyes, Heywood, Lamb, Leeds, Lord, Morss, Norris, Norton, E. S. Page, W. B. Page, Parks, Pevear, Pickert, Reynolds, Spofford, Sweet, Taylor, Tenney, Tomfohrde, Tucker, Waldron, Wingate, Whiston. At the close of the dinner a song, written for the class by Buchanan, was sung in his absence by Crosby, and met with great approval. It contained many bright allusions to former days. At 8.30 the class adjourned to the "Pop" concert at Symphony Hall, acting as escort to Dr. Pritchett. The only feature of

special interest to the class during the concert was the gift by the class of '94 of an automatic pig which walks, wags its head, and squeals in a very lifelike manner. The presentation was made by Professor Prescott, secretary of the class of '94, and was accompanied by the display of a large placard bearing the inscription, "A long-lost member of the class of '93 restored to its fellows." It is presumed that this gift is in return for a similar present of a live pig made by the class of '93 to the class of '94 at the semi-annual drill fourteen years ago. At the excursion on Wednesday, June 8, the class stunt at Nantasket was carried out successfully. It consisted of a representation of '93's "pre-eminent" (?) position amongst the other classes. Amidst waving of banners and inspiring music thirty-six members of the class pranced into the arena, each riding a hobby-horse and wearing a robe inscribed with the number of another class. Dragged by this team was a chariot in which sat our newly-elected president, Dawes, wearing his royal robe, emblazoned with the magic letters "'93." In the rear came a banner with this inscription: "They do say '93 always makes a noise in the world." After a few turns around the arena the stunt was declared finished, and the participants retired to be photographed. In addition to those whose names are given above as attending the dinner, the following were present during some portion of the reunion, bringing the class representation up to a total of sixty-four: Armstrong, Beattie, Bowker, C. E. Davis, Dodge, Edwards, Gamble, Hopewell, Johnson, Keith, W. D. King, Marcy, Reed, C. W. Sawyer, Sayward, Tidd. The Decennial Catalogue of the class of '94, which has just been issued, contains the following comparison of the statistics of the incomes of that class with those of '93:—

A comparison with the figures given in the Decennial Catalogue for the class of '93 is of interest especially because of the striking similarity of the tables for the two classes. Each has two members receiving less than \$1,000. In each case the largest group of salaries is that ranging from \$1,500 to \$1,999, and in each case the median falls in the group \$2,000 to \$2,499. '93's table shows nineteen men as receiving \$5,000 or more. '94's shows twenty-one.

Among the personal histories in the catalogue the following will be of interest to '93 men:—

Edmund Lathrop Andrews, 105 Quincy Street, Chicago, Ill., with American Telephone and Telegraph Company. I worked for the Western Electric Company in Chicago for about a year. I went with the American Telephone and Telegraph Company in the fall of '95, as an inspector in Chicago. In 1898 was made district inspector at Chicago. In 1903 I transferred to the railway department of the American Telephone and Telegraph Company, where I have done special work in developing composite telephone apparatus for use on railway telegraph lines. I am a member of the North-western Alumni Association of M. I. T., Chicago Electrical Association, and Chicago Yacht Club. Oct. 12, 1899, I married Ethel Baker. I have two children: Frank Baker, born March 1, 1901; and Frances Ethel, born Nov. 28, 1902. I am a Republican and a Presbyterian. My pleasantest memory is of announcement of graduation. My most painful is of thermodynamics. I am in favor of moving the Institute out of town, if financially practicable; but I am utterly opposed to a union with Harvard.

—Herbert Armstrong, who for some time has been connected with the Stetson Hat Manufacturing Company at Philadelphia, has recently severed his connection with that concern, and gone to Detroit, his address being 512 Woodward Avenue, Detroit, Mich. Armstrong was present at the reunion for a short time while on his way to Detroit.—F. W. Baker is again located at the Crescent shipyards, Elizabeth, N.J. During the past year he was in Boston on a business venture with a dry dock company. He now holds a very important position with the Crescent Ship Building Company.—The firm of Beattie & Wilcox, with which R. H. Beattie is connected, is doing a large business in and about Fall River in building construction and masonry work, the firm having recently secured some very important contracts.—Charles E. Belcher is now treasurer and general manager of *Insurance*, the principal organ of the insurance interests in New England.—E. E. Blake, who for some years has been connected with the Saco and Pettee Machine Shops as selling agent, with headquarters at Newton Upper Falls, has recently received the appointment of agent of

that company's large shops at Biddeford, Me., where he took control some time last April. Blake sent a letter to the class expressing his regret at being forced to be absent from the reunion.—L. B. Buchanan, who since graduation from the Institute has been associated with Stone & Webster, engineers, is now treasurer and general manager of the Fort Hill Chemical Company, one of the many firms controlled by Stone & Webster.—John Howland Gardner has succeeded to the position of superintendent of marine construction of the New York, New Haven & Hartford Railroad Company, and is stationed at Newport, R.I. At present Gardner is looking after the construction of two large steamboats for the Fall River Line which are being built at Quincy, Mass.—W. B. Gamble is with the Detroit Graphite Company, Detroit, Mich.—John C. Hawley is civil engineer and provincial supervisor at Vigan, Ilocos Sur., Philippine Islands.—W. T. Knowlton is with the Riggs & Sherman Company of Toledo, his address being 613 The Nasby, Toledo, Ohio.—Henry Morss's forty-foot sloop, "Cossack," was the winner in its class of the recent sixty-six mile ocean race of the Corinthian Yacht Club, finishing the course in the elapsed time of 13 hours and 41 minutes and being the first boat to cross the finish line.—William A. Soley reports that the firm of John Soley & Sons, building movers and contractors, was recently incorporated, he being the treasurer of the company, and his brother, John Soley, being president.—Charles A. Tripp has recently left the employ of the Bemis Brothers Bag Company, and has set up as a consulting engineer in Indianapolis, Ind. He is interested in putting on the market a new form of water glass for steam boilers, of which he is the inventor.—James S. Wadsworth is again with the New England Telephone and Telegraph Company at 104 Milk Street, Boston.—William C. Whiston is reported to have lost a fine brier pipe during the Nantasket excursion for which he has been diligently searching ever since. Any one having information in regard to this pipe will confer a great favor on Whiston by communicating with him at 101 Highland Avenue, Newtonville, Mass.—Henry L. Rice has left Norfolk, Va., and was last heard from as in Macon, Ga.

1894.

PROF. SAMUEL C. PRESCOTT, *Sec.*, Mass. Inst. of Technology, Boston.

The Tech reunion was of special interest to '94, as it was also the tenth anniversary of our graduation. Plans had been made for the celebration of the event before the plans for the general reunion were begun. The special features were the keeping open of class headquarters at the Westminster during the afternoon of June 7 and the class dinner that evening. In the afternoon a fairly large representation of the class was present, and we were especially glad to welcome Mrs. deLancey and Miss Gaines. Visits were exchanged with '93, '97, '98, and '02. The dinner in the evening was the most largely attended since graduation, forty-five men being present at the dinner or coming in before it was over. Those present were: R. B. Adams, Batson, I. E. Beach, Bovey, M. S. Chace, Cheney, Claffin, Crary, Davis, Day, F. Drake, Duckworth, Ferguson, H. W. Gardner, Gilkey, Green, Haven, Howes, N. H. Janvrin, C. H. Johnson, M. F. Jones, J. H. Kimball, King, Kirk, Lanigan, Lawrence, Lowell, MacClure, Moore, W. D. Parker, Piper, Pollock, W. H. Pratt, Prescott, H. S. Reynolds, T. G. Richards, Swanton, Taylor, Thorndike, Tufts, Warren, Weston, Wheeler, Wheildon, Wood. Of those present who made special efforts to attend, Chace hastened home from a trip around the world; Bovey came from Minneapolis, and Drake from Duluth; Janvrin came up from Louisville; MacClure from Pittsburg; Kirk from Cleveland; Day from Montreal; Crary from Warren, Pa.; Reynolds from Columbus, Ga.; Green, King, and Pollock came from New York. President Piper presided. A most witty poem was contributed by Lowell, and was received with cheers and applause. Short speeches were made by MacClure, King, and Lowell; and a resolution was passed by a vote of thirty-six to nine that the Institute should maintain its absolute independence. About 8.15, the class went to the "Pops," a few of the '94 men who could not attend the dinner joining the others there.—The decennial catalogue of the class has been issued, the first instalment of

one hundred having been finished in time for the class dinner. The general plan of the book is as in the '93 decennial catalogue, except that there are no special articles. From the statistics made up on a basis of replies received it is seen that about 58 per cent. of the class are married. Ninety-eight children were reported, an average of one child to each family. One hundred and thirty-one men sent data regarding incomes. These show an average of salary of \$3,401. The lowest salary reported is \$450, the highest \$30,000. The median point falls at \$2,100. Twenty-one out of one hundred and thirty-one men report salaries of \$5,000 or more. It is hoped that a comparison of statistics of '94 and '98 men may be presented in a later issue of the REVIEW.—Azel Ames, Jr., has become signal engineer of the Lake Shore & Michigan Southern Railway, with headquarters at Cleveland, Ohio.—Bailey is superintendent of the manufacturing department of the Steel Cable Engineering Company.—Beardsell is a counter manufacturer in Lynn. He is also of the executive committee of the Lynn Board of Trade and of the arbitration committee of the board, and president of Lynn Boys' Club.—Berry wrote very interestingly from Stafford, England, regarding the work of the Siemens Company and of life in England. He has designed a new circuit breaker which appears to be a distinct improvement on anything which has been devised hitherto. Any Tech man who will call on Berry at Stafford may be sure of a cordial welcome.—H. A. Brown is a physician, practising at Whitinsville.—L. W. Bugbee is a lens manufacturer at Tilton, N.H.—W. D. Brown has opened an architectural office at 3 Park Street, Boston.—J. F. Campbell is an attorney in Philadelphia and special counsel for the Commonwealth of Pennsylvania.—M. S. Chace has just returned from a trip around the world. He has been especially interested in naval architecture, and has visited many of the great ship-yards of three continents. He reports an especially interesting time in Japan, and has great admiration for the Japanese.—Cheney is chief draughtsman with Stone & Webster, Boston.—Cowles writes that he has spent most of his time during the past ten years in travel in Europe, Asia, North, South, and Central America. Has been

around the world in a sailing ship, and by this means and by "steam tramps" has been to all sorts of odd quarters of the world. He visited both Wake and Weeks or Marcus Islands eleven months before they were rediscovered by a United States transport and taken possession of by our government.—Frank Drake has had a very interesting professional experience, having been engaged in mining and construction work in Colorado until 1896, when he became superintendent of some manganese mines in Southern Russia, and examined mines in Russia, the Caucasus, and Persia. In 1898 he travelled in Turkey, Greece, Italy, Tunis, Algeria, France, and England. Then became assistant manager of mines at Rossland, B.C., and finally since 1902 chief engineer for the iron mines of the United States Steel Corporation, with headquarters at Duluth.

1896.

EDWARD S. MANSFIELD, *Sec.*, 70 State Street, Boston.

The eighth annual alumni meeting of the class was held at the Berkeley Hotel on Tuesday evening, June 7, at 6 P.M. E. S. Mansfield, as secretary, and J. Arnold Rockwell, M.D., as assistant secretary, were re-elected for the ensuing year. A class spread was enjoyed between the hours of two and six, and the annual class dinner was held at 6 P.M. at the Berkeley, after which the class marched up to the "Pop" in a body, with Tech banners flying. The following men were present at the dinner: H. S. Baldwin, Callan, Colman, W. D. Coolidge, Daniels, R. A. Davis, Downes, J. M. Driscoll, Joseph Driscoll, Eynon, Fiske, F. W. Fuller, Happgood, Harkness, Hayward, H. R. Hedge, W. R. Hedge, Hersey, Hultman, Hurd, Knight, Lawrence, Leland, MacLachlan, Mansfield, Moat, Partridge, M. E. Pierce, V. M. Pierce, Rockwell, Root, Sanderson, Schaller, F. H. Smith, Thompson, Underhill, Wayne, Young. Besides the above there were present at other functions of the reunion the following: Elliot, Miss Fisher, R. L. Fuller, Gates, Goodhue, Grush, Hartwell, Hatch, Hermann, T. I. Jones, Lythgoe, Norris, Pading, Sherman, H. Smith, and Stone.—C. E.

Locke with a party of about twenty mining engineers left Boston about the 1st of June for the Silver Plume Mine in Colorado, where the Summer School in Mining is to be held for a period of about eight weeks.—Joseph Driscoll has been spending a portion of his time during the past year taking a supplementary course in mining at the Institute.—F. H. Smith, formerly with the Diamond Rubber Company of Akron, Ohio, is now located with the Boston Woven Hose and Rubber Company of Cambridge, Mass. Mr. Smith resides in Cambridge.—Schaller has left the Lake Shore & Michigan Southern Railway, where he held the position of assistant signal engineer, and is contemplating locating in the East. In the mean time, however, he is making a short visit to the St. Louis Exposition.—Colman, who for the last five years has been connected with the Ralston University of Expression at Washington, D.C., as teacher of oratory, physical culture, and dramatic art, is spending the summer taking charge of a large estate near Hopewell, N.J.—Roberts, of the Continental Iron Works of New York, is temporarily located at Block 33, Machinery Hall, St. Louis Exposition, where he is representing the above firm, and where he would be very glad to welcome any Tech men visiting the fair.—Pillsbury writes from Jacksonville, Fla., where he is located in the United States Engineer's Office, having been transferred from the department in Boston. The territory covered extends along the Florida coast from Tampa dam to Key West, and up to the St. John River, where various fortifications and other river and harbor improvements are under way.—Hewitt's latest address is 475 North Main Street, Brockton, Mass., and Merrell has changed to care of Merrell-Soule Company, North Franklin Street, Syracuse, N.Y.—Marshall O. Leighton, of the Geological Survey, has taken a field party to Arizona. S. R. Baker, '03, is with him.

1897.

JOHN A. COLLINS, JR., Sec., 74 Saunders Street, Lawrence, Mass.

William E. Reed was married on Wednesday, June 1, to Miss Elizabeth Ahl McCook, of Pittsburg.—Albert E. Kimberley, formerly at the State Experiment Station, Lawrence, Mass., has been appointed chief chemist at the Sewage Testing Station at Columbus, Ohio. About three hundred thousand gallons of sewage are handled a day at this station. George Fuller, '90, is one of the consulting engineers of the plant.—Henry M. Seaver was married on June 16 to Miss Alice V. Y. Wentworth, of Pittsfield, Mass. Mr. Seaver is the junior member of the firm of Hardinge & Seaver, architects, of Pittsfield.—T. F. J. Maguire has left the Navy Department, and entered the Geological Survey, with headquarters in the Chamber of Commerce Building, Denver, Col.—Charles L. Hammond has recently gone to Lincoln, Neb., to be superintendent of construction on the new United States court-house and post-office. He writes, apropos of the "merger," "Give it an extra brick for me."—F. L. Edmands, at the recent commencement of Columbia University, received the degree of Master of Patent Laws. He resigned from the Patent Office, and has been retained by the United Shoe Machinery Company of Boston.—Lieutenant William A. Kent, United States Infantry, has been detailed for four years' service in the Signal Corps, and has been ordered to Benicia Barracks, California. He sailed from Manila on June 15.—'97 was well represented at the alumni reunion, and, when any cheering was going on, her members were not backward about making their share of the noise. Three of our men came on from Chicago with the North-western Association,—Gray from Salt Lake City, Tone from Des Moines, and Deavitt from Chicago. Lamb was on from New York, "Jo" Bancroft from Delaware, Wilfred Bancroft from New York, C. D. Hubbard from Newport News, Clark from Lee, Busby from North Adams, Dougherty from Washington. Tuesday afternoon the class held open house at the Brunswick, having its headquarters next to '98. Light re-

freshments were served, with a punch-bowl as the centre of attraction. The secretary, with Mrs. Collins and her sister, Miss Fisher, were there to welcome all comers; and not a few of the men dropped in during the afternoon. There was much visiting around among the classes holding spreads at the Brunswick, and as a result every one had a jolly time. At six o'clock Tuesday the class held its dinner at the Copley Square Hotel. Twenty-one men were present: Vinal, A. W. Jackson, Jesse Hubbard, Hopkins, Carty, Alden, Bliss, E. P. Dunn, Tone, Lamb, Collins, Dougherty, H. D. Jackson, Fairbanks, Hosford, Deavitt, Busby, Elson, Olin, H. W. Smith, and Joseph Bancroft. As the class was to go to the "Pop" at eight o'clock, any remarks to be made had to be made between or during the courses. Practically the only subject discussed was the all-important one,—the proposed Harvard-Tech union. The various phases of the questions were brought out by Collins, Smith, Hopkins, Dougherty, H. D. Jackson, Lamb, Bancroft. In fact, all the members had something to say. One member thought that a union might be arranged,—in fact, he favored one; while the other members could scarcely see how any union were possible and yet have Tech maintain her absolute independence. Joseph Bancroft was strongly in favor of the alumni coming to the rescue of the Institute, and each alumnus pledging a certain amount per year for ten years, said contributions to go to form an endowment fund. At length it was voted that the secretary canvass the class, and ascertain what amounts could be thus raised, providing the other classes took up the same method. First, however, the matter was to be laid before the Association of Class Secretaries for its approval. The vote was carried without a single nay.

At the alumni banquet at the Somerset on Wednesday evening the following were present: Collins, Elson, Tone, Records, Carty, Gray, Clark, E. H. Robinson, Alden, H. D. Jackson, A. W. Jackson, Hunnewell, C. D. Hubbard, Norris, Joseph Bancroft, Wilfred Bancroft, H. W. Smith, Vinal, and Deavitt. Dougherty was also present, and was one of the speakers.

1898.

C.-E. A. WINSLOW, Sec., Hotel Oxford, Boston, Mass.

The marriage of W. L. Butcher to Miss Annie Dean Sherman, daughter of Mrs. Ida S. Sherman, was solemnized in the Old Cambridge Baptist church, Tuesday evening, June 14.—W. Brewster announces his engagement to Miss Mary Southgate, of Plymouth, Mass. (Bryn Mawr, 1901). He is at present in charge of the building of fourteen kilometres of road, including twenty bridges, from San Diego de los Banos to Paso Real, Cuba. He writes that the government is to appropriate two million dollars a year for the next five years for roads and other public works throughout the island.—G. F. Doty was married Tuesday, May 24, to Miss Jessie Miller Tuttle, daughter of Henry E. Tuttle, of Pasadena, Cal. Mr. and Mrs. Doty will be at home after July 1 at Hotel Arcadia, Santa Monica, Cal.—W. Hollis Godfrey, Course V., who is now teaching at the East Boston High School, renewed his connection with '98 at the reunion, and under date of June 20 wrote to the secretary as follows: "From beginning to end the reunion was one of the pleasantest experiences of my life, and the splendid enthusiasm and comradeship of the three days served to bind me far more closely to Tech and to her ideals. I trust with you that she may go on to a splendid destiny *alone*."—Dr. G. H. Wright was married Wednesday afternoon, June 15, to Miss Mary Louisa Watson, daughter of Mrs. Eben Mitchell Watson, at the Goddard Farm, Goddard Avenue, Brookline. The marriage reception following the ceremony was given by Dr. and Mrs. Charles Goddard Weld at the adjoining Weld estate. C.-E. A. Winslow was one of the ushers.—Clarence Goldsmith and Miss Ethel Peabody Southwick, daughter of Mr. and Mrs. Amos Southwick, of Lawrence, were married in that city on June 14, and will be at home on Tuesdays in November at 31 Maple Avenue, North Andover.—W. B. Nelson and Miss Jeannie Marina Hoyt, daughter of Mr. and Mrs. Francis Goold Hoyt, were married on June 30 at Trinity Church, Brooklyn, N.Y.—The festivities of the Tech reunion began for '98 with

a class dinner at the Hotel Oxford on Monday evening, June 6. Thirty-six members of the class were present, and Professors Gae-tano Lanza and Arlo Bates honored us as the guests of the occasion. At a short business meeting before the dinner it was voted to re-elect the three standing committees of the class on the Class Fund (H. L. Coburn, chairman), Class Dinner, (J. T. Robinson, Jr., chairman), and Informal Reunions (C. H. Pease, chairman). Proposed relations with Harvard University were the principal topic of conversation during the dinner, and H. L. Coburn introduced a resolution placing the class on record as in favor of the absolute independence of the Institute. After a long discussion, participated in by Russell, Streng, Wesson, Putnam, Sargent, Curtis, Coburn, and Winslow, and after two amendments had been made, the resolution was finally passed in the following form:—

The members of the class of '98, assembled at their annual dinner, desire to place themselves informally on record as in favor of maintaining the absolute independence of the Massachusetts Institute of Technology.

After dinner Professor Bates made a strong plea for the traditions and past policy of the Institute, and urged the alumni to make themselves heard as quickly and as distinctly as possible. Wright, Pratt, Edgerly, and other members of the class spoke briefly on various topics. Our long-distance men at the dinner were A. Sargent from New York, D. W. Edgerly from Long Island, L. S. Streng from Newark, R. W. Pratt from Columbus, G. K. Newbury from Cleveland, and V. R. Lansing from Chicago. Cablegrams were received from L. D. Gardner in Paris, and N. Watkins in Honolulu, bearing "Good wishes for '98." The other special '98 events of Reunion Week were the issuing of our Class Book, a spread at the Hotel Brunswick on Tuesday afternoon, at which the custom of Treating was in force, and the performance of a Freshman drill for our stunt at the beach on Wednesday. A. L. Goodrich, E. F. Russ, and A. Sargent arranged the details of this performance; and Sargent acquitted himself with great ability as general. The Class Book, prepared by S. S. Philbrick, C. A. Bennink, and C.-E. A. Winslow, was issued at the class

dinner, June 6. Bennink's cover design has been much praised, and the body of the book contains pretty full accounts of the careers of a majority of the men in the class, since the returns made to the committee were on the whole exceptionally detailed and interesting. The book will be sent to all '98 men with a request for a remittance of one dollar and a half, which amount, if generally paid up, will defray the expense of the book and leave a small margin for the class treasury.

1899.

MILES S. SHERRILL, *Sec.*, Mass. Inst. of Technology, Boston.

At the alumni reunion, the grand success of which is told at length in the body of this number of the REVIEW, the Class was represented by the following members: L. B. Abbott, W. O. Adams, J. W. Allen, H. C. Ashley, C. G. Barry, R. F. Bennett, F. M. Blake, Miss Alice Burr, H. H. B. Campbell, J. F. Clapp, H. C. Eaton, G. D. Emerson, J. A. Flemings, Miss Frazer, G. M. Gale, E. H. Hammond, G. R. Heckle, Heghinian, J. L. Hern, E. T. Hildreth, H. P. James, H. G. Johnson, F. L. H. Kimball, W. A. Kingman, W. A. Kinsman, J. G. Leiper, Jr., W. S. Mattheson, C. A. Moore, C. L. Morgan, H. S. Mork, W. L. Norris, H. L. Morse, G. H. Perkins, E. B. Phelps, D. M. Pray, G. H. Priest, Warren Priest, A. W. Proctor, M. S. Richmond, B. R. Rickards, G. H. Riker, T. P. Robinson, W. O. Sawtelle, M. S. Sherrill, H. J. Skinner, C. M. Swan, F. R. Swift, F. C. Waddell, W. C. Whitney, G. C. Winslow, Jr., and P. W. Witherell. The secretary wishes to thank Messrs. Richmond, Skinner, Swan, and Hammond for their competent assistance in arranging for the class reunion. In enthusiasm during the entire celebration the Class was second to none. On Tuesday, June 7, a very pleasant and successful class spread and dinner was held at the Copley Square Hotel. At the dinner twenty-nine men were present, and at this time a Resolution was passed placing the class on record as being opposed to any plan for union with Harvard which would in any way endanger the absolute independence of the Institute. After the dinner the Class adjourned

in a body to attend "Tech Night" at the Pops. Each member was given a class flag and a goodly supply of '99 confetti; that is, confetti especially made for the occasion, with the numerals '99 printed on each piece. This latter feature proved a happy idea, for during the entire evening '99 confetti literally rained from the balconies and all parts of the house. The next morning pieces of confetti were found from the Subway to Allston. Wednesday morning '99 was early on deck with its confetti, flags, and megaphones for the harbor excursion. At Nantasket the Class, with Ted Hammond as marshal, displayed in the march to the hotel its old ability to drill, and along the route received much applause, principally due to little Miss James, who, seated on the shoulders of her father, waved with much enthusiasm a '99 flag. The class stunt consisted of a beer race, the object being to run a certain distance, drink a bottle of beer, and then race back. Harry Morse was an easy winner. At the alumni banquet the same evening the class was well represented.—R. C. Harrison writes:—

Your little circular and bill, etc., came a day or so ago, and I will try to get into the neighborhood of a money order post-office as soon as possible to enclose \$2 with this document, which is called forth by the paragraph relating to business, home, and social life, etc., of members of class. I have been down here about nine months on the sage bush side of Owen's River Valley, which is a little north of Death Valley. Am at present assistant superintendent of the Poleta Mine under Wallace Macgregor, who is an old Tech man. When Macgregor is here, I am master mechanic, head carpenter, assayer, cyanide tosser, and occasionally run the mill^{*} on night shift. Then, too, I keep the dinner buckets in repair, and solder up pots and pans for the cook. In cases of great necessity I can take the pack train—six mules and saddle horses—and bring down a few trips of ore or wood to the mill. There are only a few of the best of us who can turn out twenty-five or thirty A No. 1 assays one day and build screen doors the next. With the boss away I do, in addition to the things I have mentioned, the hiring and firing of men, book-keeping, purchasing of supplies, etc.

—J. Stone, Jr., is with the firm of Kees & Colburn, architects at Minneapolis. He is at present engaged in the interesting work of

designing the interior of a new theatre for that city.—Timothy C. O'Hearn, formerly assistant in mechanical engineering, is now city electrician of Cambridge.—George C. Glover holds the Perkins Fellowship, and is taking a course in architecture in Paris, France.—The engagement of Hervey J. Skinner to Miss Grace Elliot, of Wakefield, Mass., has been recently announced.—Godfrey L. Smith writes from Newport News, Va.:—

It may be of interest for my classmates to know that I have recently become identified with the Hampton Roads Boat Building Company, Incorporated, of this city, as secretary and treasurer. We shall commence operations in about a week, and will build all sorts and sizes of launches, sail-boats, and rowboats, besides doing repairing and overhauling of hulls and engines. There seems to be an excellent prospect of success, and we are pushing the business for all it is worth.

I shall still be connected with the Newport News Shipbuilding and Dry Dock Company, in the scientific department, where I have been for the past five years.

—W. C. Phalen has recently received a permanent appointment with the Pennsylvania division of the United States Geological Survey. He is now devoting his attention to stratigraphic and structural work in the Appalachians. Phalen was married on the 1st of June to Miss Bertha Emily Walter, of Washington, D.C.—The engagement of J. Howard Adams to Miss Bertha Tucker, of Providence, has been recently announced. Mr. Adams is at present with McKim, Mead & White, architects, New York City.—Leonard H. Field, Jr., has severed his connection with Peabody & Stearns since returning from a European trip, and has opened an office in Jackson, Mich.—Worthington Palmer is associated with Marcus Reynolds, architect, in Albany, N.Y.—Gardner M. Gale, until recently with Messrs. Lord & Hewlett, New York, is now in Buffalo, where he is engaged in closing several deals which may locate him there permanently.—Almeron W. McCrea is with Architect George Freeman, New York, who among other things recently landed the Crescent Athletic Club's new club-house in competition.—Frederick W. Grover and Francis E. Cady,

'01, are in St. Louis, making tests for the jury of awards. They will be glad to meet Tech men attending the exposition in the exhibit of the Bureau of Standards, Electrical Building.—Alfred W. Proctor has returned to Washington, and has re-entered the Patent Office.—At the recent commencement of Columbian University Albert F. Nathan, Jr., and Arthur H. Brown received the degree of Master of Patent Laws. Nathan is now in charge of the Montreal office of the firm of Fetherstonhaugh & Co., patent barristers, solicitors, and experts. Brown has returned to Boston to practise law with his father.—Arthur I. Kendall received his Ph.D. in bacteriology from Johns Hopkins University on June 14. He has been appointed sanitary biologist under the Panama Commission. Kendall looked up some of his old friends in Boston before sailing to take up his new duties on June 21.—Henry H. Hewitt is a student at École des Beaux Arts, Paris.—H. Phillip James is located in Bridgeport, Conn., with the Bryant Electric Company and the Perkins Electric Switch Manufacturing Company.—Harry G. Johnson is connected with the Boston Woven Hose Company, Cambridge, Mass.—William A. Kinsman is with the International Silver Company of Bridgeport, Conn.—E. H. Hammond has recently come East, and taken a position with John Briggs & Co., with factory at East Boston.—John A. Flemings is chief draughtsman with the Massachusetts Electric Company, Boston.—Herbert H. Starr was married April 4 to Miss Beatrice Wilmarth at Philadelphia.—Harry L. Morse is about to enter military life, having just received a commission in the regular army.—Amasa A. Holden is principal of the Woonsocket High School, Woonsocket, R.I.—John E. Congdon is superintendent of tests, New York Belting & Packing Company at Passaic, N.J.—'99 was well represented in the automobile hill-climbing contest on Patriots' Day on Commonwealth Avenue Hill, Boston, Kenneth Blake, of the Locomobile Company, and Walter Adams, of the Crestmobile Company, both having entered machines for their respective companies.

... D. C. Churchill, formerly of Oberlin, Ohio, and a graduate of the Boston School of Technology, a mechanical engineer of remarkable genius,

has another school in which hand-weaving of fine fabrics is taught to forty or fifty boys who show remarkable skill. Mr. Churchill, who came out in 1901, soon detected the weakness of the native method of weaving, and has recently invented a hand loom which can turn out thirty yards of cloth a day, and will double, and in many cases treble, the productive capacity of the average worker. And he expects soon to erect a large building in which he can set up the new looms and accommodate a much larger number of pupils. . . .

The government inspectors publicly commend Mr. Churchill for declining to patent his invention and for leaving it free to be used by everybody without royalty of any kind.—*Boston Evening Transcript*, March 8, 1904.

Churchill is Government Superintendent of Industries in India.—Walter R. Bean was married on June 22 to Miss Sarah Driver Lippincott, of Woodbury, N.J. Mr. Bean is a draughtsman with the New York Shipbuilding Company of Camden, N.J.—Edgar P. Trask has announced his engagement to Miss Edith Stokes, of Woodbury, N.J. Mr. Trask is in the scientific department of the New York Shipbuilding Company.—Allen Loomis was made a happy father on June 5 by the arrival of a seven-and-one-half-pound boy, Peter Burr Loomis. Mr. Loomis has left the New York Shipbuilding Company, and has gone into automobile work.—It is the sad duty of the secretary to record the death of Edward P. Walters (V.). Walters was taken sick with scarlet fever while at Katonah, N.Y., where he had charge of the local laboratory of the New York City Water Department. After a short illness he died on January 28. Edward P. Walters was born May 4, 1878, at East Boston, Mass. He graduated from the high school in Providence, R.I., in June, 1895, and entered Tech in the fall of the same year. On graduating from the Institute, he accepted a position as instructor in the University of Illinois, leaving there in September, 1900, to become biologist for the Metropolitan Water Board of Massachusetts. In January, 1903, he accepted a similar position with the Brooklyn laboratory under Mr. George C. Whipple, where he remained until the New York and Brooklyn Water Departments were put under one management. He was then placed in charge of the local laboratory at Katonah.

1900.

GEORGE EDMOND RUSSELL, *Sec., 25 Broad Street, New York, N.Y.*

On the evening of Wednesday, June 15, Mr. A. B. White and Miss Laura Frances Cummings, of Tideoute, Pa., were married at the Presbyterian church of that place. They will be at home after October 1 at Riverside, Cal., where White is in business for himself as civil engineer. The heartiest congratulations and best wishes of "Auld Lang Syne" go to this happy couple.—In a very interesting letter W. R. Collier writes from Atlanta, Ga., where he has been located ever since graduation. While his first venture there was to associate himself with a consulting chemical engineer, the far greater part of his time has been spent with S. P. Brown as partner in a general consulting engineer's office. Of this partnership and its success he writes in characteristically modest terms, as follows:—

We had little to do for the first year, but later on work began to come our way, and we had all that we could handle. Although we handled mostly municipal work, we did a fair amount of work for corporations; and by the end of the second year we had completed works in Georgia, Florida, Alabama, North Carolina, and South Carolina. . . . In January, 1904, it was decided to dissolve the firm of Collier & Brown, as Brown had been offered a good position in the North, and as the writer had been offered the position of engineer with one of the largest electrical contracting firms in the South. Our career together, though rather short, we consider very satisfactory, as during three years we had installed seven municipal electric light plants, several sewerage and water-works systems, two large water power developments, and a number of mills. I, after being with the contracting company that I spoke of for about four months, accepted a position with the Georgia Railway & Electric Company of Atlanta. This company owns all of the street railway and lighting interests in Atlanta, has several interurban car lines, and does a large amount of suburban lighting. . . .

—W. C. Chaffee is now in Birmingham, Ala., where he is making a fine reputation by his architectural designs.—H. M. Harps dropped

in for a call a few days ago, being on his way East after a stay of three years in the West. Harps was with the New York, New Haven & Hartford Railroad for about one year after graduation, and then left to go to Iowa with the Mason City & Fort Dodge Railroad as assistant bridge engineer. After two years of work putting in new structures he accepted a position to superintend the construction of the new Kaw River bridge on the lines of the Chicago & Great Western Railroad. This bridge consisted of three two-hundred-feet spans, with eighty-feet girder approaches. Four of the piers were of the pneumatic caisson type, reaching sixty-five feet below the water line. Harps was in charge of both sub-structure and superstructure.—S. P. Brown is now in Bridgeport, Conn., in charge of the erection of a large depot for the New York, New Haven & Hartford Railroad. Although quite busy at this, he finds time to carry on some consulting work in New York City. For three years he was in partnership with W. R. Collier in Atlanta, Ga.—H. L. Walker is in business for himself in Atlanta, and is making a great success. At present he is at work on three large apartment houses, besides a number of residences.—Robert S. Blair has left the Patent Office to practise patent law at 220 Broadway, New York City. He was married May 11, 1904, to Miss Mabel Corson, of Washington. Francis Cady, '01, was best man.

1901.

E. B. BELCHER, *Sec.*, Quincy, Mass.

'01 men were not lacking in enthusiasm during the reunion, and the '01 yell was everywhere in evidence. The class held open house at the Brunswick on Tuesday afternoon, with the following ladies acting as matrons: Mrs. G. W. Allen, Mrs. W. J. Sweetser, Mrs. W. A. Read, Mrs. C. F. F. Campbell, Mrs. E. S. Foljambe, and Mrs. J. T. Scully. Among the visitors were Joe Evans from Lowell, Eddie Cook from Pittsburg, W. F. Davidson from Newcastle, Pa., W. O. Kennard from Alton Bay, N.H., W. A. Read from Brooklyn, N.Y., W. J. Sweetser from Sackville, N.B., and A. L.

Klieves from New York City. Owing to a misunderstanding with the management of the Copley Square Hotel, the class dinner was not held there as anticipated, but at the Oak Grove Creamery, where forty-eight of the fellows enjoyed Mr. White's hospitality. Under the new constitution seven men were elected to class offices for the ensuing year: Ellis F. Lawrence, president; L. P. Wood, first vice-president; R. S. Littlefield, second vice-president; J. T. Scully, member executive committee; F. H. Bond, member executive committee; E. B. Belcher, secretary-treasurer; Ralph Whitman, assistant secretary-treasurer. About seventy-five men gathered around the 'or banner at the "Pops," and did what they could to make every one else aware of that fact. The class canes were a great success, and furnished an attractive souvenir of the evening. On Wednesday the men again made a splendid showing, and with "Gentle" Jack Scully as prophet furnished a "stunt" that was a winner from start to finish.—Thirty-one men were present at the alumni dinner at the Somerset, and gave a good account of themselves.—A. W. Rowe (X.) has been awarded the Swett scholarship, and will start immediately for Germany, where he will study for a degree of Ph.D. in chemistry.—George P. Shute (X.) has accepted a position in Ohio as assistant on filtration work.—Joe D. Evans is engaged in general contracting and railway construction.—S. J. Stone has gone to Pittsburg, Pa.—Hector McNeil (I.) is in Cape Breton.—The secretary is informed of the engagement of H. P. McDonald, also of the marriage of E. C. Harper (I.), A. D. Nutter (I.), and F. B. Webster (XIII.).—J. P. Woodsom (VI.) was recently married, and is living in Melrose.—Married on June 4, 1904, Alice Dempsey to James R. Putnam (II.).—W. P. Davis is back at the Institute, assisting in the Mining Department.—It will greatly assist the secretary if members of the class will keep him informed of any change in location either of themselves or of their particular friends. Naught One has always been proud of herself collectively, and not infrequently facts come to light which give her adequate cause for being proud of individual members. A noteworthy instance comes to us through the columns of a prominent Lafayette (Indiana) daily, which reports in considerable de-

tail a lecture on "the cause and probable effects of the war between Japan and Russia, delivered by Mr. E. H. Davis, of the chair of History and Economics at Purdue." The account informs us that "it was an hour of very profitable listening for a very large audience, composed chiefly of students and instructors of the university, with a number of visitors from the city." A résumé of the lecture is prefaced with the remark that "the speaker had so . . . sifted the significant from the unimportant facts . . . that his statements had all the value of personal testimony from one who had intimate acquaintance with underlying causes, and all the convincing effect of a demonstration." At the close of the article we read the gratifying statement that "the speaker was heartily applauded, and received from many the personal assurance of a very helpful lecture." That the value ascribed was genuine will be taken as axiomatic by those who know "Ted" Davis's quality; and that a real impression was made is clear from the fact (which comes to us from a source wholly independent of the newspaper article) that on the strength of this talk he was asked to give a course at Purdue on Eastern politics. Bully for Ted! We also learn that he is now in St. Louis in charge of the Purdue Exhibit at the Louisiana Purchase Exposition. Bully again!—On the evening of Wednesday, June 22, at St. Leo's Church, Dorchester, Mass., F. B. Driscoll, Course I., was married to Miss Charlotte A. Keegan, of Dorchester. Guy Peterson, Course III., was one of the ushers.—We have also the announcement, belated, but none the less interesting on that account, of the marriage on May 1, 1902, of H. R. Gilson, Course II., to Miss Clara Guilday, and of the birth on Aug. 8, 1903, of Miss Elizabeth Virginia Gilson.

1902.

CHARLES W. KELLOGG, JR., Sec., 51 St. Paul Street, Brookline, Mass.

The following changes in address and other data have reached '02 headquarters since the last number of the REVIEW: Marvin has been transferred to the Chicago plant of the B. F. Sturtevant

Company, 281-289 South Clinton Street, Chicago.—J. W. Wadleigh is first lieutenant United States Marine Corps, cruising on United States flagship "Rainbow," and may be addressed care Headquarters, United States Marine Corps, Washington, D.C.—Belcher is now bacteriologist with the Maignen Filtration Company, address 1310 Arch Street, Philadelphia, Pa.—Bosworth has been made superintendent of the Denver Fire Clay Company.—C. H. Burr is a mining engineer in Butte, Mont., and may be addressed P.O. Box 733.—L. E. Daloz is a textile colorist, 38 Pleasant Street, Dorchester, Mass.—F. J. Eager is with the Boston Transit Commission, and lives at 11 Carlisle Street, Roxbury, Mass.—J. J. Eames is now with the Improved Paper Machinery Company, 65 Arlington Street, Nashua, N.H.—E. O. Eastwood has left Washington to join the Fore River Ship and Engine Company at Quincy, Mass.—J. C. Fruit is with the Remington Construction Company, 8 West 92d Street, New York, N.Y.—H. W. Geromanos lives at 3600 Boquet Street, Pittsburg, Pa.—J. D. Ireland is working in the Camp Bird Mine, Ouray, Col.—C. S. Lawson is in the testing department of the General Electric Company at Schenectady, N.Y., address 618 Chapel Street.—S. C. Lind is studying at the University of Leipzig, Leipzig, Germany.—McKechnie's address is now Dorchester, Col.—F. J. Mague is assistant engineer with the New York Continental Jewell Filtration Company, living at Hotel Varnum, Washington, D.C.—J. R. Mardick is a chemical engineer with the W. F. Mosser Company, tanners, Hay Building, DuBois, Pa.—O'Connell is assistant engineer with Ellsworth & Kilpatrick. His address is still as given in the Record Book.—Pember is a landscape architect with Guy Lowell, 1128 Tremont Building, Boston.—W. M. Rice is a draughtsman with John N. Robbins Company, Erie Basin Dry Docks, Brooklyn, N.Y.—H. L. Sherman is cement tester for the United Shoe Machinery Company. His address is Elliott Street, Beverly, Mass.—J. W. Smith is first assistant to Middlesex County Engineer. His address is as before given.—Stockman is with the Armstrong Coal Company, Pittsburg, Pa.—Townsend is with the American Bridge Company, East Berlin, Conn.—Trowbridge is

now a draughtsman with the George F. Blake Company, Third Street, East Cambridge, Mass.—Vaughan is with G. H. Cutting & Co., building contractors, 28 William Street, Worcester, Mass.—Wetmore is with the ordinance department at the Rock Island Arsenal, Rock Island, Ill.—Wood is an architectural draughtsman with J. W. Bishop & Co., Lenox, Mass.—Montgomery is in the underwriter's bureau of the Middle and Southern States, 71 Williams Street, New York, N.Y.—Latshaw's address is now P.O. Box 705, Pueblo, Col.—Collier was married just before the reunion festivities, on June 1, 1904, to Marian Miller Field in Chelsea, Mass. The couple will be at home after August 1 at 11 Baker Avenue, Beverly, Mass.—Wendell's address is P.O. Box 182, Sayre, Pa.—Millar is with Charles G. Sherman, consulting engineer, Board of Trade Building, Boston.—Manning is with the Thomson Electric Welding Company, Lynn, Mass. He lives at 163 Pleasant Street, Lynn.—Miss Beckler is private assistant to Professor Sedgwick at the Institute.—Bright is at 153 North Fifth Street, Reading, Pa.—C. H. Porter has left Newburyport to become assistant to Professor Clifford at the Institute.—Of '02's connection with the reunion little remains to be said, as it is still fresh in the minds of the participants, and, as far as the non-combatants go, the least that can be said for their information is that the whole affair was fully as successful as planned. At the class dinner at the Tech Union on Tuesday, June 7, the following officers were elected for the ensuing year: president, C. E. McCarthy; first vice-president, C. G. Mixter; second vice-president, H. K. Hooker, assistant secretary, I. W. Reynolds.

1903.

WALTER H. ADAMS, *Sec.*, 22 Dix Street, Winchester, Mass.

On the evening of March 30 the third informal dinner was held at the Tech Union. Twenty-three members of the class were present, and listened to an interesting talk by Mr. Burrison, who was the guest of the evening. On the evening of May 5 another dinner was

held at the Union, at which Mr. Munroe and Mr. Fay were the guests. Twenty men were present. Mr. Fay told what was to be done at the grand reunion, and urged every one to be present. Mr. Munroe then gave a very interesting account of the history of the Institute up to the death of President Rogers. This was enjoyed by all. President Morse then bade the class farewell, as he was to start for Montana a few days later. This meeting was the best one of the year, and it was too bad that more fellows were not present.

1903 was very well represented at the reunion. Fifty-six members of the class were present at the dinner at the Hotel Berkeley on Tuesday evening. These included a number of men who were members of the class, but who did not graduate. As this was the annual meeting, the election of officers for the following year took place. Mr. Nibecker's resignation as secretary was accepted, and a vote of thanks given him for his faithful work. The following officers were then elected: J. W. Howard, president; H. S. Morse, first vice-president; H. S. Baker, second vice-president; W. H. Adams, secretary and treasurer; G. W. Swett, assistant secretary and treasurer. The following resolution was passed by the class:—

Resolved, That the members of the class of '03 assembled at their first annual dinner wish to place themselves formally on record as favoring the maintenance of the absolute independence of the Massachusetts Institute of Technology.

'03 was not very much in evidence at the "Pop," owing to the poor location of our seats at the rear of the hall. The class was well represented on the harbor excursion, and had a very good "stunt," although the one that was prepared was not given, since the committee requested that it be omitted. Among those present at the reunion and dinner were: Aldrich, Ancona, Atwood, C. H. Avery, Ballou, Barnaby, Blatt, Bridges, Buhler, Capelle, Carlisle, M. H. Clark, Cushman, F. W. Davis, Doran, Drake, Endres, Fales, Farnham, Ferry, Gammons, Gleason, Gould, G. M. Harris, R. Haskell, R. M. Hoód, J. W. Howard, Humphrey, Jackson, Jewett,

R. R. Jordan, Kearney, A. W. Kimball, Loughlin, Lynn, MacGregor, Manson, A. S. Martin, Merrill, Moies, Newman, Olmstead, Osborne, Paine, Pell, Ricker, Robertson, Ruxton, Scudder, Simpson, Swett, Taylor, Whitcomb, and Wing.—P. J. Kearney and R. Haskell were given the degree of Master of Science for post-graduate work, and a number of '03, who had been unable to graduate in 1903, owing to sickness and other causes, received their degrees. It may be of interest to know that twenty-three '03 men returned to the Institute this last year as assistants. A large number of these are intending to remain another year.

NECROLOGY

JULIAN ABBOT KEBLER, '78

Almost immediately after graduating from the Institute of Technology in the class of 1878 Mr. Kebler commenced his active business life in the service of the Burlington & Missouri River Railway Company (now a part of the Chicago, Burlington & Quincy Railway system).

His first position was as rodman in an engineering party, under the immediate supervision of Captain Warren Beckwith, superintendent of maintenance of way. He remained with the Burlington & Missouri River Railway about three years, receiving frequent promotion, first to transitman, then as maintenance of way engineer, and later as roadmaster under W. C. Perkins, superintendent of the Iowa division.

In December, 1881, Mr. Kebler was appointed superintendent of the Mendota Coal and Mining Company, operating mines at Mendota, Mo., a company controlled by his former chief, Captain Warren Beckwith. He resigned this position in the fall of 1882 to become superintendent of the Wapello Coal Company, operating mines at Kirkville, Ia., and also superintendent of the Ottumwa & Kirkville Railway.

In July, 1884, Mr. Kebler was appointed general superintendent

of the Whitebreast Coal and Mining Company, at that time the most important coal mining interest in Iowa, operating a number of mines in various parts of the State. The same interests controlling the Whitebreast Company had organized the Colorado Fuel Company, and were taking preliminary steps to prospect and acquire coal lands and engage extensively in the coal business in Colorado. Mr. Kebler made frequent trips to Colorado during 1884, 1885, and 1886, acting in an advisory capacity, and in May, 1887, located in Denver as general superintendent and later general manager of the Colorado Fuel Company and a number of associated companies afterwards consolidated with it.

His earliest work was in charge of a large force of prospectors, with headquarters at Prospect Camp, Pitkin County, Colo., at that time about thirty miles from the nearest railroad, with the Elk Mountains, one of the highest spurs of the Rocky Mountain range, intervening. This was an enjoyable period of Mr. Kebler's life, to which he frequently referred with pleasure in after years. His letters written at that time describe the hardships of the life, in the saddle most of the waking hours, camping at night without shelter, but he enjoyed it all with the spirit of a boy.

From this time on the story of Mr. Kebler's business life is the history of the Colorado Fuel Company, and its successor, the Colorado Fuel and Iron Company, as he was the active executive head of these corporations for seventeen years and until shortly before his death, in November, 1903. In 1887 the Colorado Fuel Company began active mining operations, opening and equipping mines at Sopris and Rouse, Colo. The aggressive and energetic management of the company soon made it a formidable rival of the Colorado Coal and Iron Company, which had previously had almost a monopoly of the coal business in Colorado; and overtures for a consolidation were made by the latter company, resulting in the organization of the Colorado Fuel and Iron Company, Oct. 21, 1892, consolidating the two companies with the management in full control of Mr. Kebler and his associates. Mr. Kebler was made general manager of the new company, which at that time had a capitalization of \$13,000,000 stock and \$6,000,000 bonds.

The iron and steel department acquired from the Colorado Coal and Iron Company had not passed through the experimental stages, and had never been a source of any considerable profit to the company. The steel plant was antiquated, the iron ore resources unknown, and most of the difficulties of operating in such a remote locality had not been overcome. This branch of the business was entirely new to Mr. Kebler, but he took charge of it with his usual energy and intelligence. He visited all of the large steel plants in the United States, and quickly acquired a comprehension of the possibilities of this department.

The panic of 1893 quickly followed the consolidation, and prevented the company from making the financial arrangements necessary for the needed improvements at the steel works; but, utilizing the limited means at his command, Mr. Kebler, in an incredibly short space of time, made this department the most important and profitable part of the business. The cost of producing iron ore was cut in half, the production of the blast furnaces was more than doubled, and finished products were produced at costs not before dreamed of.

The return of general business prosperity in 1898 made it possible for the company to finance an increase of capitalization, principally for the purpose of enlarging the steel works and necessary auxiliaries. In 1899 and 1900 the capital stock was increased \$12,000,000, and in 1901 \$15,000,000 of debenture bonds were issued, making the total capitalization \$46,000,000. The details of planning the improvements and spending the proceeds of the new capitalization fell on Mr. Kebler's shoulders. These improvements consisted in part of increasing the blast furnace capacity fourfold, modernizing the entire plant, building auxiliary plants for the manufacture of open hearth steel, wire nails, wire of all kinds, structural steel, plates, sheets, tin plate, etc., and involved also opening five new coal mines, building 2,000 coke ovens, opening and equipping iron mines and limestone quarries, building railroads, dams, reservoirs and canals for water supply, etc., and an expenditure of \$22,000,000. All of this work was crowded into the four years from 1899 to 1903, the operations extending from Sunrise, Wyo., to Hanover and Gallup,

N.M., and Eastern Utah, and involving a railway journey of nearly 4,000 miles to visit all of the varied operations. The steel works and mines were at the same time kept in full operation, employing over 17,000 men. Mr. Kebler never shirked any responsibility, but the strain was too great for him. In the latter part of 1899 he began to suffer from sleeplessness and continuous headaches. His associates urged him to take a rest, and prevailed on him to go to Europe early in 1900. While there, he visited all of the important steel works on the Continent. He returned greatly improved in health, and resumed his arduous duties, only to break down again from the same cause, when he took a second European trip, Dec. 30, 1901, extending his travels to Egypt and the Nile.

Soon after his return a recurrence of the old trouble with his head so discouraged him that he wished to resign; but about this time a new complication and annoyance arose in the attempt of a party of Eastern stock speculators to gain control of the company, with the avowed purpose of ousting the old managing officers. Out of loyalty to his associates, he abandoned all thoughts of resigning, and assisted them in completely routing and causing the ignominious retreat of the enemy. Aug. 21, 1901, Mr. Kebler was elected president of the company.

In the summer of 1903 a new and friendly interest, known as the Rockefeller-Gould interest, acquired control of the Colorado Fuel and Iron Company. They fully appreciated the value of Mr. Kebler's services, and urged him to retain the presidency, even taking a year's vacation, if he thought it necessary; but he felt that his only chance for life and health was in rest and complete freedom from care. He retired from active business at the annual meeting, Aug. 19, 1903, retaining, however, his place as a member of the board of directors, and immediately went to the seashore. The expected result followed, and he apparently entirely recovered his health. Returning to his home in Denver in October, his friends were delighted to notice his improved appearance. But the relief had come to him too late; and, without warning and probably while asleep, death came to him Nov. 20, 1903, the immediate cause of his death being the breaking of a blood-vessel in the base of the brain.

In 1888 Mr. Kebler married Miss Emma Abbot, of Westford, Mass. Having no children, Mrs. Kebler was not tied down by home duties, and accompanied Mr. Kebler on all his journeyings, enduring all the fatigue and hardships of life in camp and at the mines, and taking an active part in sociological work among the employees.

Mr. Kebler was always deeply interested in the welfare of his employees, not only those who came in personal contact with him, but the thousands of miners and laborers not even known to him by name. And it was through his instrumentality, aided by his wife, that the sociological department of the company was organized.

His character, which combined strength and simplicity, was an open book to his friends and associates. He was high-minded, honest, loyal, and modest in all relations of life. In his business relations his most marked characteristics were untiring energy, courage, and attention to details. He was a loyal friend, a delightful host; and, while taking part in club life and public affairs, his greatest happiness was in his home life and family relations. He had an infectious cheerfulness even in times of serious trouble, which his business associates found very helpful and inspiring.

He was fearless in times of danger, and frequently risked his life in the performance of his duty. A notable instance among many examples of his personal courage will illustrate. On Feb. 18, 1896, an explosion of gas in the Vulcan Mine at New Castle, Colo., caused the death of forty men and practically destroyed the mine. Although the mine belonged to a rival corporation, Mr. Kebler travelled 400 miles to the scene of the disaster. Arriving there the following morning, and finding the local officials demoralized, he at once took charge, and headed the first rescue party into the mine.

Mr. Kebler was always loyal to his Alma Mater, and realized that the technical education he gained was invaluable in his business career. The class of 1878 can well be proud of its youngest member, and mourn his untimely death at the age of forty-six.

JOHN C. OSGOOD.

BOOK REVIEWS

EMPLOYEES AND WAGES

BY DAVIS R. DEWEY. Special Report Twelfth Census of the United States. Washington, 1903. pp. cxv, 1228.

No branch of statistical investigation presents more difficulties in practice and conclusions than the determination of changes in wages from time to time. A huge mass of data has been accumulated by State bureaus of labor statistics, much of it worthless. Other examinations of the same subject are open to the suspicion of bias in the points to be proven. The source of information must of necessity be more or less anonymous. The statistical aim at best is also more or less indefinite. The investigator may be studying merely nominal wages per day or per hour; he may be seeking the annual earnings, which take account of irregularity in employment; or, finally, he may be investigating social welfare, which includes not only the study of income, but the range of variation in prices of food and supplies. This present investigation does not seek information upon the third of these problems, but represents an attempt to discover merely changes in the rate of earnings for typical occupations and industrial establishments, comparing 1890 with 1900. While thus more modest in its scope than some previous attempts in the same field, the figures included are by no means inconsiderable in number. 720 pay-rolls for 34 distinct industries, and including 270 industrial establishments, are included. The comparison covers more than 60,000 men and women employed in establishments in 1900, and about 175,000 are compared by occupations in 1900 with others employed ten years earlier. The pay-rolls for all of these establishments—124 pay-rolls, including upwards of 500 employees each—and the actual earnings for a stated period have been carefully copied in the field and collated in this volume.

This investigation is perhaps of greater importance for the meth-

ods employed than on account of the actual results attained. The old-fashioned methods of comparison by average wages are entirely abandoned. The system of comparing wages by classified groups, first applied on a large scale in the Massachusetts census of 1885, is likewise set aside as inadequate,—a system which in the Eleventh Census of the United States had to be abandoned on account of its unwieldiness. The system of index numbers tried by the Aldrich Committee in 1893 is similarly rejected, and an entirely modern and, for the United States, untried system of comparison by medians, quartiles, and cumulative percentages is utilized. This system, recently tried with great success in France, and especially in the investigation of wages in Belgium, is adopted and most successfully applied in this instance. The principles adopted are few and simple, so far as the collection of material is concerned. A relatively small number of industries is chosen as typical of industrial conditions, and each is worked in detail. Actual payrolls are copied, thus taking account of all irregularities in employment, as well as of other conditions affecting earnings. The only criticism which can justly be made from the standpoint of the best practice seems to be the omission of comparisons by modulus. This criterion, most prominent in foreign investigations, seems to have been set aside in this present case.

From the standpoint of results as above mentioned, the report is less startling than from that of method. In fact, comparatively little change in wages seems to have taken place during the ten years since 1890. Had the investigation not bridged the depression between two periods of prosperity, the great value of this novel means of comparison would have been more apparent. The enormous rise of wages from 1897 to 1900 has apparently been about equalled by the decline from 1890 to the lowest depth of industrial depression in 1895. Yet, although the results in themselves are rather negative, a great service has been rendered to statistical science by this piece of investigation. Dr. Dewey has for many years been closely identified with the progress of statistical research, mainly by his devotion to the interests of the American Statistical Association. This contribution, serving as a model to State bureaus

throughout the country, cannot but raise the standard of statistical investigation in a field hitherto characterized by the grossest irregularities. Striking testimony to the appreciation of his services in this connection is offered by his subsequent appointment to the Committee on Scope and Method of the Thirteenth Census of the United States. The relations of the Institute of Technology to American industrial progress are such that no improvements in the line of industrial statistics can fail to be of interest and significance. That this brilliant piece of work in the federal service should have been so well performed by a member of its Faculty will still further emphasize the unique position of the Institute in its relation to manufactures and industry.

WILLIAM Z. RIPLEY, '90.

HARVARD UNIVERSITY.

THE LIFE OF JOHN A. ANDREW, GOVERNOR OF MASSACHUSETTS
1861-1865

BY HENRY GREENLEAF PEARSON (Assistant Professor of English in the Massachusetts Institute of Technology). Two volumes. Houghton, Mifflin & Co. 1904.

Forty years after the events—forty years whose tremendous changes have made the Civil War seem almost as remote as that of the Revolution—Professor Pearson has produced a living book which makes the men and affairs of 1860 as real and glowing as they were to Governor Andrew's contemporaries. In its character drawing, its descriptive power, its dramatic unity, this "Life of John A. Andrew," merely as an historical picture, is worth a hundred of those pseudo-historical novels with which the reading public is, we hope, almost satiated. But it is much more than a rarely brilliant painting of an extraordinary epoch: it is a real contribution to history; for no future historian of the Civil War but will draw largely upon the atmosphere of these two volumes for the proper lights and shadows of his more extensive narrative.

So completely has Professor Pearson steeped himself in the period

of which he writes that this "Life" is more an autobiography than a biography. We seem to hear Andrew himself passing judgment upon the characters and acts of his contemporaries; we look at current events as he saw them; we share his impatience, his faith in the people, his simple piety. We live again with Andrew those weeks of suspense after the firing upon Sumter, when the government at Washington was dumb and when the patriotic fervor of Massachusetts seemed to arouse scarcely an echo; we share with him the indignation against incompetency, and worse, which made the first years of the war so disheartening; and we feel with him the agonizing suspense which was ended, as it only could be ended, by the Emancipation Proclamation.

All this counts greatly toward the understanding of Andrew's character and official acts, and adds immensely to the living interest of this "Life" of him; but, of necessity, it counts against the judgments of men and events which are explicitly or implicitly given. We see the Civil War as Andrew saw it, not as men see it to-day; and we find here, therefore, the faults which must follow a lack of historical perspective. We contemplate, for example, Lincoln's acts as they affected Massachusetts,—a very impatient and unreasonable Massachusetts,—not as they were related to the entire country. We see the annoyances of yesterday, the delays of to-day, the petty, worrying duties of to-morrow; and because of this we fail sometimes to see the broad historical result of those daily minutiae. As a consequence, there is an effect of belittlement which extends even to Andrew himself. Butler and Simon Cameron have nothing to lose, of course, by such a close and partial view of their actions; but the saints and heroes of the war, especially Lincoln, suffer by such a process, just as Washington suffers by bringing to light the newspapers, pamphlets, and private letters of his time.

For this effect upon the reader Professor Pearson is in no degree to blame. On the contrary, having chosen to present Governor Andrew and his associates as Andrew saw himself and them, he is greatly to be congratulated upon having merged himself so completely in those men and in their times. It is a marvellous feat

for a man born since the Civil War to live and to make his readers live in that period, so foreign in every way to the present, and yet not so far away that it is possible or permissible to draw upon the imagination for any details of the picture. Mr. Pearson sees things as they were, draws them with almost photographic accuracy, and yet, with rare literary skill, by a touch here, by an emphasis there, brings out Andrew as he lived and worked, all the rest of the narrative being skilfully blended into a background for this central figure.

This vital quality in his book Professor Pearson has produced by two means: by steeping himself so thoroughly in his matter that he is absolute master of it and by using an autobiographical, almost a colloquial, tone throughout the narrative. How enormous must have been the task of absorbing the voluminous material upon which this "*Life of Andrew*" is built only the author himself can understand. He must have found his reward, however, in the literary power which such mastery gives. This power is so great as to arouse regret that the author felt impelled to carry colloquialism to a point sometimes where it suggests the press reporter. Language was still more or less formal, even in the newspapers of 1861; and the reader who finds himself, as every reader of this "*Life*" must, in the atmosphere of Civil War times, is given every now and then a shock by phrases which belong to the jargon of 1904. It is unnecessary to point these out, as Professor Pearson's ear is too exquisite for him not to have found them himself; and they jar only because the English upon which they intrude is otherwise so flowing, so musical, and so picturesque.

From the point of view of popular interest, it is greatly to be regretted that Governor Andrew had to wait nearly forty years for an adequate biography. From the literary point of view, however, it is fortunate that no one else has forestalled Professor Pearson. From the view-point of history, too, it is vital that this generation which knew not the Civil War should have brought before it with such force, such cogency, such virile truthfulness, the atmosphere which surrounded and the motives, fears, and hopes which underlay that greatest of internecine strifes. They will find nothing lack-

ing here in the clearness with which Mr. Pearson shows the gradual transformation of the war from a political incident into a moral death-struggle; they will miss no step in the evolution of the leaders in that war out of commonplace politicians into ethical heroes; for they will witness in this "Life of Andrew" the grounds upon which he from the beginning, and Lincoln not long afterwards, placed their faith in the virtue, the patriotism and the wisdom, of the "plain people."

J. P. M.